

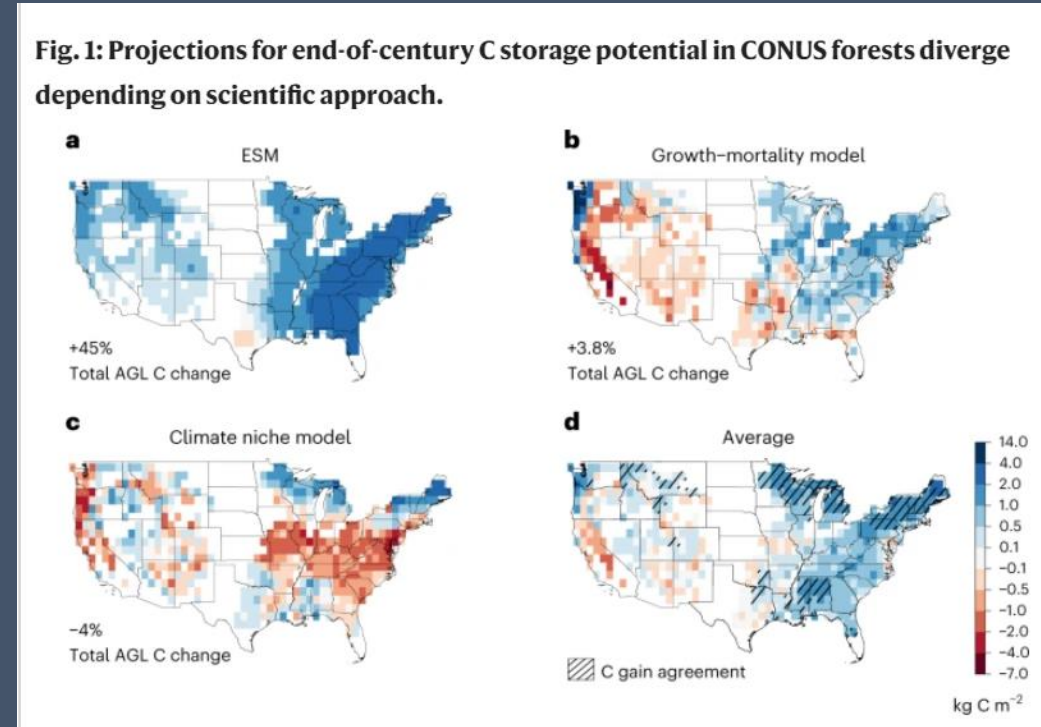
Goddard Forum 2024: Visioning Climate-Smart Forestry in the Mid-Atlantic Region

Climate-smart Forestry: Overview of opportunities and challenges

Melissa M. Kreye, Associate Professor, Extension Specialist
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CSF: Opportunities and Challenges

- Threats to forests
- Definition ambiguity
- Social will
- Decision-making dilemmas
- Funding challenges
- Policy and governance
- Market demand
- Transparency



Wu, C., Coffield, S. R., Goulden, M. L., Randerson, J. T., Trugman, A. T., & Anderegg, W. R. (2023). Uncertainty in US forest carbon storage potential due to climate risks. *Nature Geoscience*, 16(5), 422-429.

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The screenshot shows the CFI website header with a navigation menu. The article title is "U.S. researchers offer enhanced definition of 'climate-smart forestry'", dated June 19, 2023, by Michigan State University. Below the title is a diagram comparing the phases of Current CSF and proposed Enhanced CSF frameworks.

Phases	Enhanced		Current		Enhanced
1. Assess Forest Condition and Use (or potential)	Deforested	Degraded	High Intensity management	Low Intensity management	Minimal to no interventions
2. Calculate Carbon Storage and GHG Flows (actual and potential)	Low storage, low sequestration		Low storage, med/high sequestration	Medium storage med/high sequestration	High storage, medium/low sequestration
3. Determine Strategy and Tactics	Afforestation/ Reforestation		Improved Forest Management Reduced Impact Logging		Avoided Conversion
4. Consider Feasibility and Implementation	Lower feasibility		High feasibility		Lower feasibility
5. Assess Broader Impacts of CSF Strategy	Socio-cultural values and alignment Trade-off assessments for co-benefits and adequate safeguards Landscape level broader impact (e.g., habitat corridors, economy)				

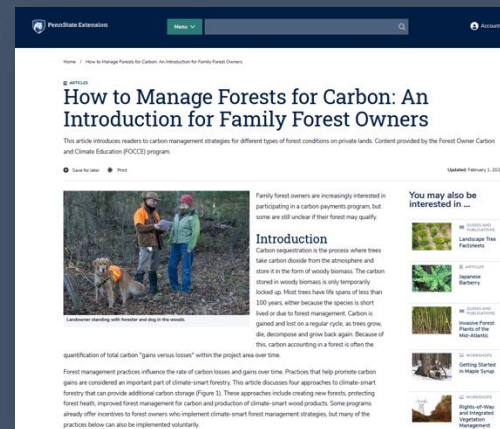
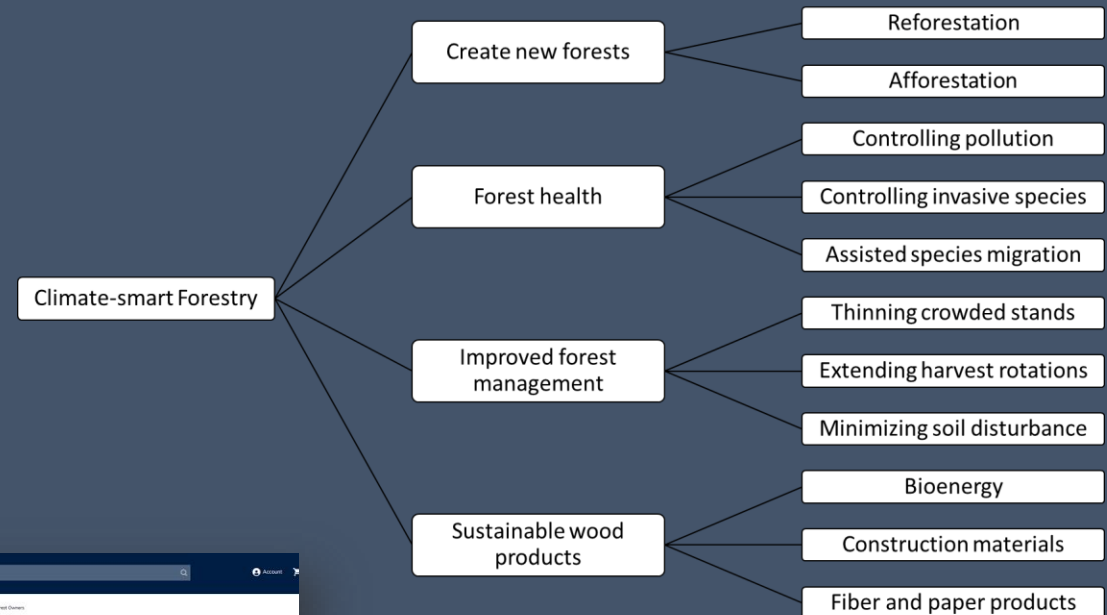
Legend
Dark Green: Topics in this section have the highest representation in Current CSF but can represent a narrow definition.
Light green: Topics in this section tend to be under-represented in Current CSF; enhancing CSF would better encompass these topics.

Planning and implementation phases of both Current CSF and proposed Enhanced CSF frameworks. Credit: MSU

Cooper, L., & MacFarlane, D. (2023). Climate-Smart Forestry: Promise and risks for forests, society, and climate. *PLOS Climate*, 2(6), e0000212.

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REPORT | NOVEMBER 25, 2019 SHARE ↗

U.S. Public Views on Climate and Energy

Democrats mostly agree the federal government should do more on climate, while Republicans differ by ideology, age and gender

BY CARY FUNK AND MEG HEFFERON



Majorities of Americans say the federal government is doing too little to ...

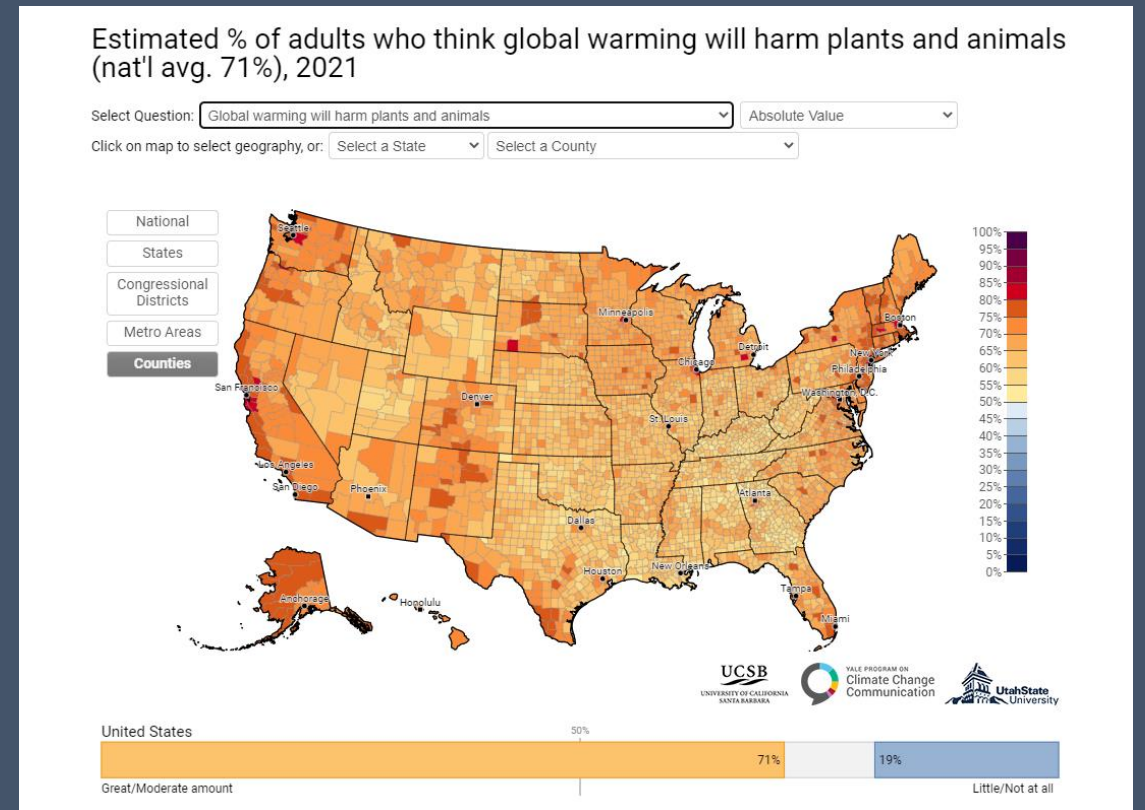
Majorities of Americans say the federal government is not doing enough to protect the climate, environment

% of U.S. adults who think the federal government is doing too little to ...

Funk, C., & Hefferon, M. (2019). US public views on climate and energy. *Pew Research Center*, 25.

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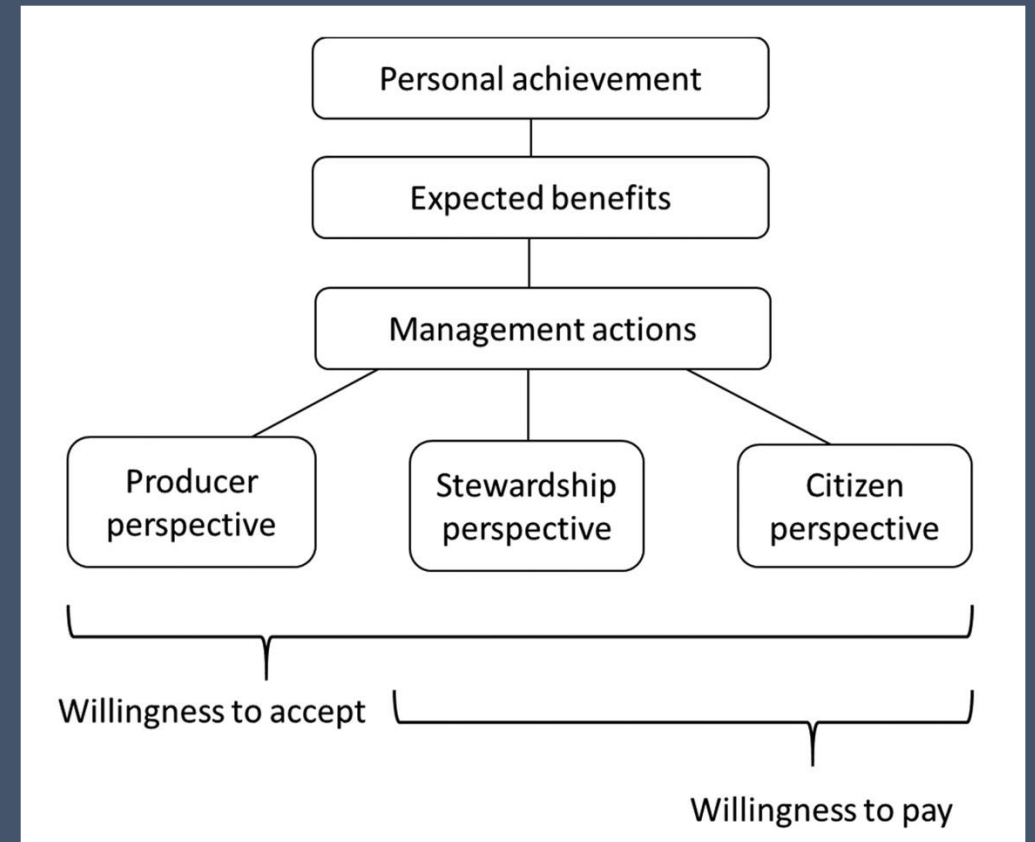
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<https://climatecommunication.yale.edu/>

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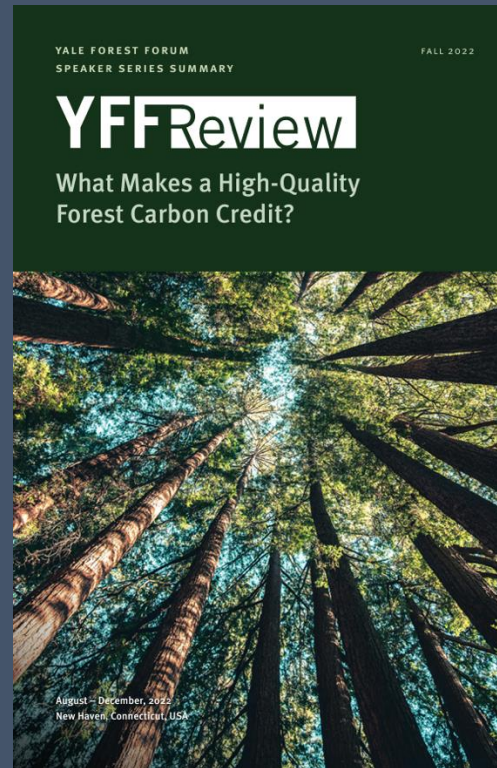
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Kreye, M. M., Adams, D. C., Soto, J. R., Tanner, S., & Rimsaite, R. (2021). Economic and ethical motivations for forest restoration and incentive payments. *Society & Natural Resources*, 34(8), 1093-1110.

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- Incorporate the co-benefits of managing for forest carbon into planning
- Consider needs of smaller landowners
- Non-market approaches to support forest carbon sequestration

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Forest Owner Willingness to Accept Payment for Forest Carbon in the United States: A Meta-Analysis

by  Sadikshya Sharma and  Melissa M. Kreye *  

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Forests **2022**, *13*(9), 1346; <https://doi.org/10.3390/f13091346>

Received: 6 July 2022 / Revised: 7 August 2022 / Accepted: 19 August 2022 / Published: 24 August 2022

(This article belongs to the Special Issue Framing Forest Carbon for Policy in Temperate North America: Baby Steps toward National Carbon Goals)

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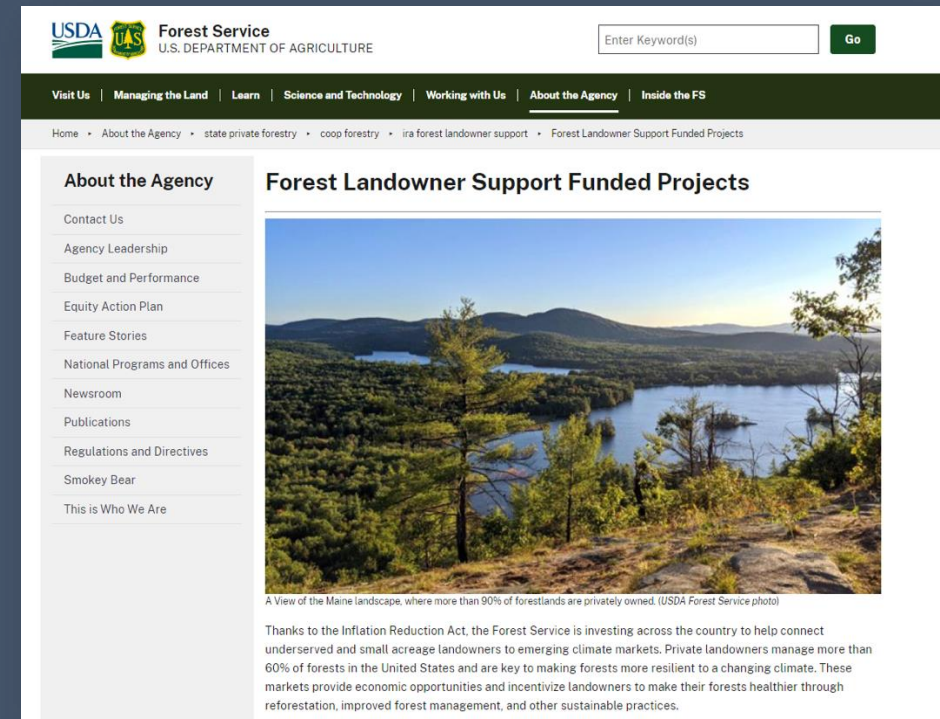
Abstract

Forests in the United States provide important carbon sequestration services that could be leveraged for climate change mitigation. There is increased interest among decision makers and investors to extend forest carbon payment programs to family forest owners (FFOs), the largest category of private forest owners. Since FFOs manage forests for multiple objectives, it is unclear which contract requirements and payment levels will appeal to early adopters and perhaps establish the direction of innovation. To answer this question, we conducted a comprehensive review of the research literature assessing forest owner preferences for carbon payment programs. Out of 22 papers reviewed, a total of 13 stated preference studies were included in the meta-analysis. Robust regression modeling and benefit transfer techniques were used to generate estimates for carbon payment contracts for different categories of FFOs. Results show significant variation in forest owner willingness to accept (WTA) as a function of management objectives, contract length, number of forest acres, management plan requirement, and management restrictions. Average annual per acre payment values were lowest for conservation-oriented forest owners, followed by passive and production-oriented forest owners. Overall, findings suggest the need for diverse types of contracts and payment levels in order to have widespread participation in carbon programs by forest owners.

Keywords: carbon sequestration; family forest owners; meta-analysis; contract design; willingness-to-accept

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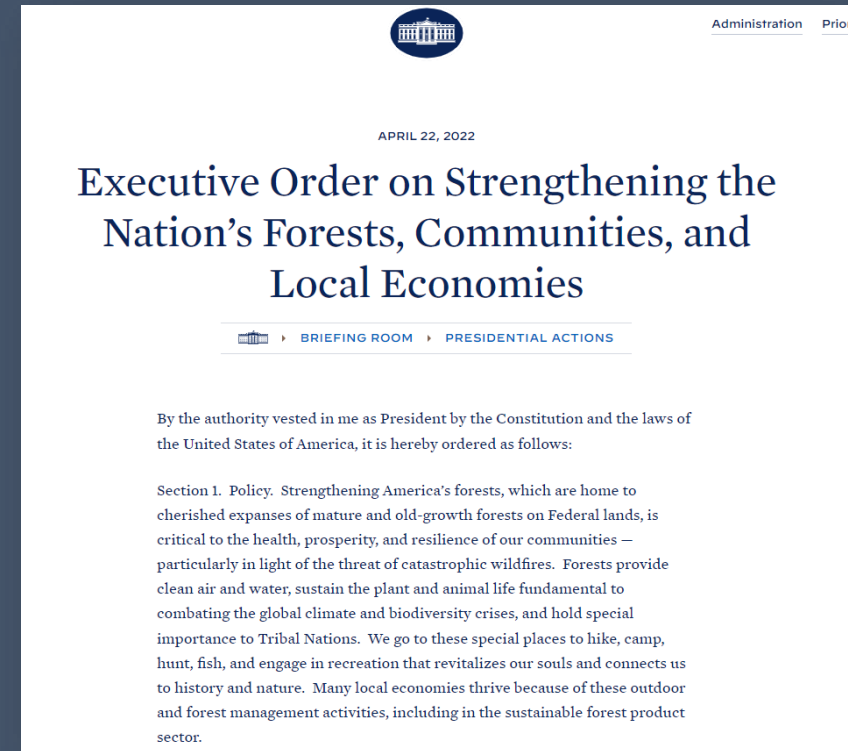


The screenshot shows the USDA Forest Service website. The header includes the USDA logo, the text 'Forest Service U.S. DEPARTMENT OF AGRICULTURE', and a search bar with the text 'Enter Keyword(s)' and a 'Go' button. Below the header is a navigation menu with links: 'Visit Us', 'Managing the Land', 'Learn', 'Science and Technology', 'Working with Us', 'About the Agency', and 'Inside the FS'. The main content area is titled 'Forest Landowner Support Funded Projects' and features a large photograph of a scenic Maine landscape with a lake and mountains. Below the photo is a caption: 'A View of the Maine landscape, where more than 90% of forestlands are privately owned. (USDA Forest Service photo)'. The text below the photo reads: 'Thanks to the Inflation Reduction Act, the Forest Service is investing across the country to help connect underserved and small acreage landowners to emerging climate markets. Private landowners manage more than 60% of forests in the United States and are key to making forests more resilient to a changing climate. These markets provide economic opportunities and incentivize landowners to make their forests healthier through reforestation, improved forest management, and other sustainable practices.'

Inflation Reduction Act: The US Forest Service will receive \$5 billion in funding to assist in helping communities prevent wildfires, provide grants to non-Federal forest landowners, and to support state and local forestry programs.

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The screenshot shows the top portion of a White House website page. At the top right, there are navigation links for "Administration" and "Priorities". Below this is the White House seal. The date "APRIL 22, 2022" is centered. The main title of the executive order is "Executive Order on Strengthening the Nation's Forests, Communities, and Local Economies". Below the title is a breadcrumb trail: "BRIEFING ROOM" and "PRESIDENTIAL ACTIONS". The main text begins with "By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:". The first section, "Section 1. Policy", discusses the importance of forests for communities, the environment, and local economies.


<https://www.whitehouse.gov/briefing-room/presidential-actions/2022/04/22/executive-order-on-strengthening-the-nations-forests-communities-and-local-economies/>

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Climate-Smart Forestry: the missing link

P.J. Verkerk ^a  , R. Costanza ^b, L. Hetemäki ^a, I. Kubiszewski ^b, P. Leskinen ^a, G.J. Nabuurs ^c, J. Potočník ^d, M. Palahí ^a

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Highlights

- Climate-Smart Forestry (CSF) is missing in global decarbonization strategies.
- CSF should increase effectiveness of carbon removals and enhance forest resilience.
- Policy needs to balance wood production, biodiversity protection and ecosystem services.
- Policy must find the right balance between short and long-term goals.

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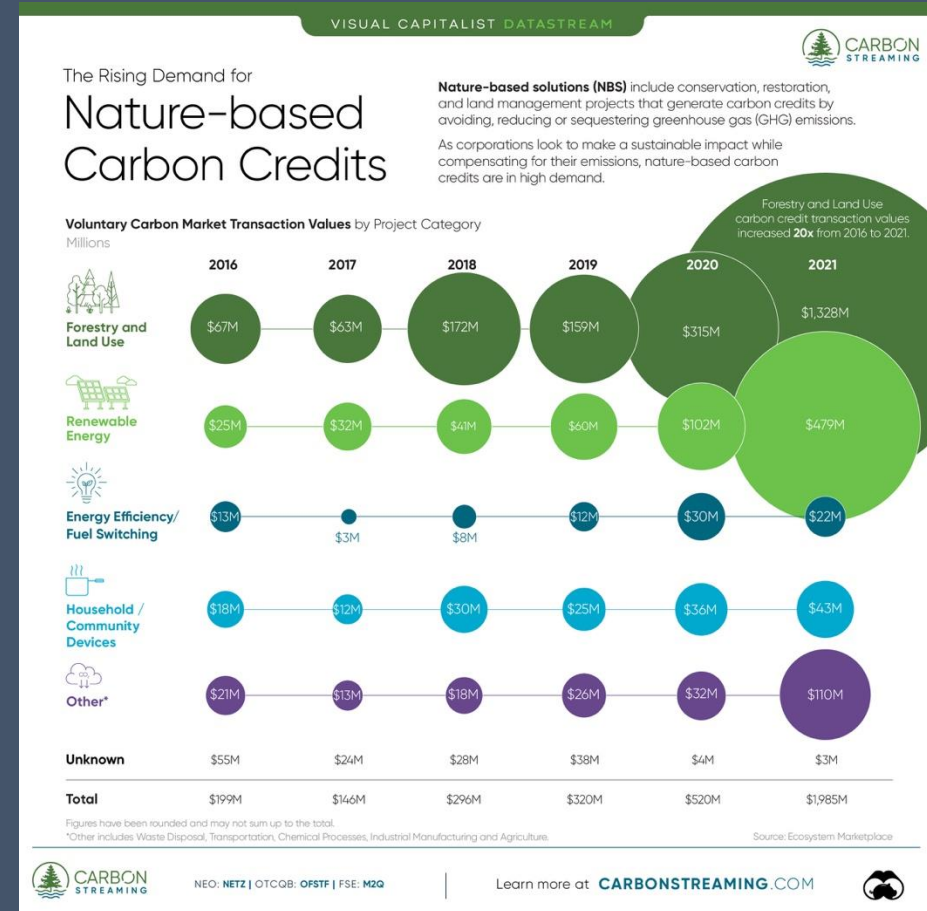


The screenshot shows the top portion of the Justice40 Initiative page. At the top right, the word "Administrative" is partially visible. Below it is the White House logo. The main heading is "JUSTICE40" in a large, bold, blue serif font. Underneath this is the subtitle "A WHOLE-OF-GOVERNMENT INITIATIVE" in a smaller, blue, sans-serif font. Below the subtitle is a navigation bar with a small icon of a building and the text "ENVIRONMENTAL JUSTICE". A quote from President Joe Biden is displayed in a light blue box: "We'll create good jobs for millions of Americans...and we'll do it all to withstand the devastating effects of climate change and promote environmental justice." Below the quote is the attribution "PRESIDENT JOE BIDEN, 2022 STATE OF THE UNION". The section "What is the Justice40 Initiative?" is followed by a paragraph starting with a large red letter "F" that explains the initiative's goal of directing 40% of the benefits of certain federal investments to disadvantaged communities.

<https://www.whitehouse.gov/environmentaljustice/justice40/>

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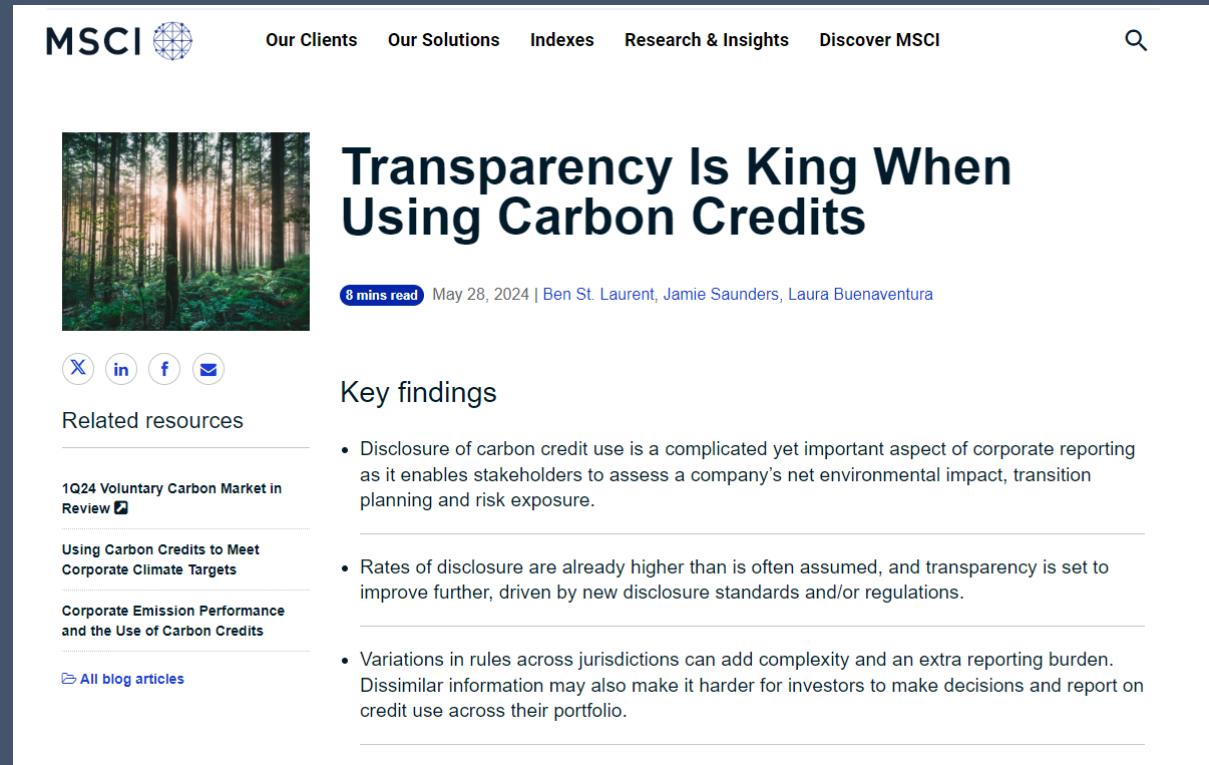
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Demand for forest carbon credits has declined in volume since 2019.

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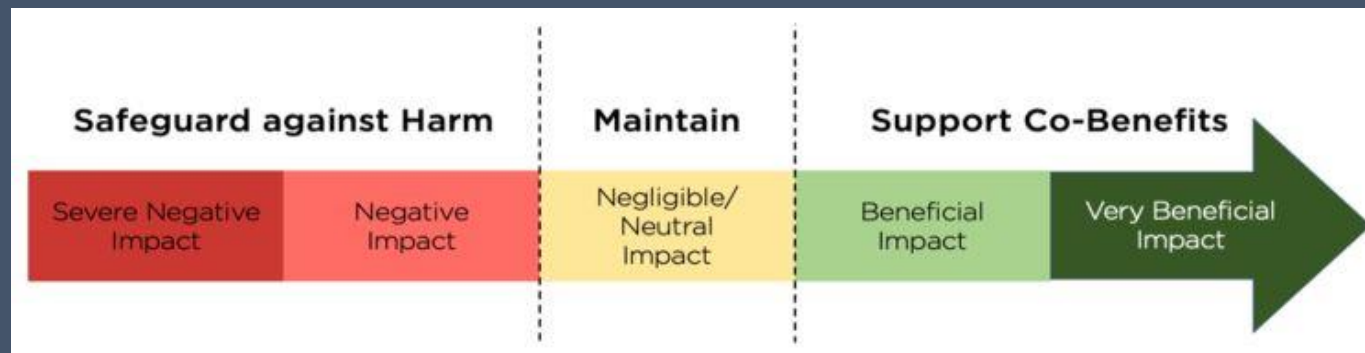
The screenshot shows the MSCI website header with navigation links: 'Our Clients', 'Our Solutions', 'Indexes', 'Research & Insights', and 'Discover MSCI'. The main content area features a blog post with a forest image, the title 'Transparency Is King When Using Carbon Credits', a '8 mins read' badge, and the date 'May 28, 2024'. The authors listed are Ben St. Laurent, Jamie Saunders, and Laura Buenaventura. Below the title are social media sharing icons for X, LinkedIn, Facebook, and Email. A 'Related resources' section lists three articles: '1Q24 Voluntary Carbon Market in Review', 'Using Carbon Credits to Meet Corporate Climate Targets', and 'Corporate Emission Performance and the Use of Carbon Credits'. A link for 'All blog articles' is also present. The 'Key findings' section contains three bullet points: 1) Disclosure of carbon credit use is a complicated yet important aspect of corporate reporting as it enables stakeholders to assess a company's net environmental impact, transition planning and risk exposure. 2) Rates of disclosure are already higher than is often assumed, and transparency is set to improve further, driven by new disclosure standards and/or regulations. 3) Variations in rules across jurisdictions can add complexity and an extra reporting burden. Dissimilar information may also make it harder for investors to make decisions and report on credit use across their portfolio.

<https://www.msci.com/www/blog-posts/transparency-is-king-when-using/04666529176>

“The disclosure of carbon credit use is becoming increasingly important for both companies and investors — but there is a lack of standardization in the format and detail of disclosures.”

Summary

- CSF is gaining traction as a concept but there are still challenges:
 - Risk assessments vary under different assumptions
 - Standardization of relevant definitions, protocols and strategies
 - Decision-making dilemmas
 - Transparency in implementation and markets
 - Equity and impacts
- Further research and policy development are needed





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Thank You!

The screenshot shows the FOCCE website with a navigation menu (ABOUT, PEOPLE, GOALS, RESOURCES FOR FOREST OWNERS, NEWS) and a search bar. The main content area is titled "Resources for Forest Owners" and features two sections: "Forest Carbon Management" and "Forest Carbon Incentives".

Forest Carbon Management

- [How to Manage Forests for Carbon](#) Introduction to carbon management strategies for different types of forest conditions on private lands.
- [Forest Carbon Pools: Where are they?](#) An overview of where carbon pools are located in a forest.
- [How Forests Store Carbon](#) An introduction to how forest store carbon, the carbon cycle, and how forests can be used to address climate change.
- [What Do Forest Carbon "Sequestration" and "Storage" Mean?](#) A discussion about the terms carbon sequestration and carbon storage.
- [Methods for Estimating Carbon Within Forests](#) Introduction to some of the computation methods used by forestry professionals to estimate carbon in trees as well as in the understory.
- [Carbon Accounting in Forest Management](#) Description of how baselines and harvesting are included in carbon accounting.

Forest Carbon Incentives

- [The Economic Value of Private Forests and Climate Change Mitigation](#) Discussion of the economic values associated with carbon and climate change mitigation on private forests, and where investments should go next.
- [How much should I be paid for forest carbon?](#) Ways to think about payment offers in regard to opportunity costs and management objectives.
- [Conversions Commonly Used When Comparing Timber and Carbon Values](#) Some of the common units of measure associated with timber and carbon and how to convert values from one unit to another.

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If you would like to be notified about upcoming FOCCE programs and events please fill out the form below.

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Which of the following best describe you? *
 Land Management Professional
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 Other

Email *
Mailing address
Message (if you have any)

Submit

<https://sites.psu.edu/focce/>