# **1t.org U.S. Chapter Summit Supplemental Resources**

June 22-24, 2022

Compiled by the MSU Forest Carbon and Climate Program (MSU FCCP)

This document is a sample of resources for lt.org participants. It is not intended to be fully holistic but aims to capture a diverse set of seminal academic works, accessible guides and resources, and contemporary reasoning.

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# Popular Narrative

- Elgin, B. (2022, March 17). <u>This Timber Company Sold Millions of Dollars of Useless Carbon</u>
  <u>Offsets</u>. www.bloomberg.com; Bloomberg.
  - A timber company CEO who has sold significant quantities of carbon credits critiques the validity of the environmental benefits achieved and explores opportunities to improve the system

Gill, S. (2022, June 10). Yes, carbon offsets are imperfect—but we need them. Fortune.

• Article addresses commonly critiqued issues in carbon markets and identifies where actions can be taken to improve both supply side integrity and demand side integrity to enhance transparency and verifiable climate impacts

Dinneen, J. (2022, June 10). <u>A third of the world's largest companies now have net-zero targets</u>. New Scientist.

 Article discussing how countries and large companies have increasingly pledged to reduce their net emissions to zero, but details on how they plan to achieve these pledges are still lacking

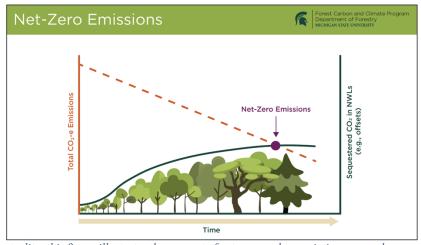
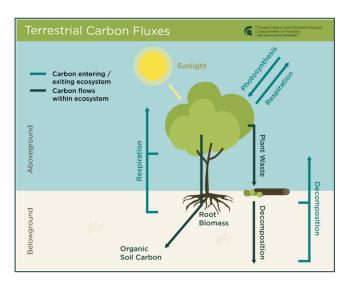


Figure 1. Carbon Neutrality: this figure illustrates the concept of net-zero carbon emissions, or carbon neutrality (FCCP 2022)

# Setting the Framework: Climate Science and Hope

- Cooper, L., Swanston, C., Macdonald, C. (2021, January 6). <u>Latte & Learn: Forest Carbon 101</u> [Webinar]. FCWG Science Series for Policymakers, Michigan State University Forest Carbon and Climate Program.
  - Webinar recording, presentation slides, and summary document featuring key takeaways and talking points from the Forest Climate Working Group's (FCWG) Science Series presentation on key concepts related to forests' role in climate change mitigation



Fargione, J. (2020, January 8). <u>Opportunity</u> below-ground flows

<u>Assessments for Natural Climate Solutions</u>

[Webinar]. FCWG 2019-20 Learning

Exchange Series, MSU Forest Carbon and Climate Program.

Figure 2. Terrestrial Carbon Fluxes: A diagram displaying above- and below-ground flows of carbon entering, moving within, and exiting a terrestrial ecosystem. (FCCP 2022)

- Webinar recording, presentation slides, and supplementary Q+A responses from presentation exploring magnitude of different natural climate solutions at US state level
- Griscom, B. W., Adams, J., Ellis, P. W., Houghton, R. A., Lomax, G., Miteva, D. A., ... & Fargione, J. (2017). <u>Natural climate solutions</u>. Proceedings of the National Academy of Sciences, 114(44), 11645-11650.
  - High-level analysis of the concept of natural climate solutions, benefits, and potential to address climate change
- North, M., Sprague, E., Germann, S. (2021, March 16). <u>Latte & Learn: Reforestation for Ecosystem Resilience</u> [Webinar]. FCWG Science Series for Policymakers, Michigan State University Forest Carbon and Climate Program.
  - Webinar recording, presentation slides, and summary document featuring key takeaways and talking points from the Forest Climate Working Group's (FCWG) Science Series presentation on exploring ecosystem-scale science, logistics, and opportunities for reforestation in response to disturbance as well as a changing climate

The Nature Conservancy. (n.d.) Natural Climate Solutions. Webpage.

 High-level overview of natural climate solutions including science, case studies, and various resources

## Climate Leadership: Policy at Home and Abroad

- Diedrich, G. (2022, February 21). <u>How will the 2020 Infrastructure Investment and Jobs Act impact forests and climate?</u> Forest Carbon and Climate Program; Michigan State University.
  - FCCP Overview article breaks down major components of the Bipartisan Infrastructure Bill to communicate linkages and impacts to climate and forests
- Forest Climate Working Group. (2018, September). <u>Tapping into U.S. Forests to Mitigate</u>
  <u>Climate Change: A Policy Solutions Toolkit | Forest Climate Working Group.</u>
  - Approaches to state and local policy solutions, including consideration of a wide range of tools to deliver financial incentives as well as actions that go beyond financial stimuli for forest sector carbon mitigation
- Governors' Climate and Forest Task Force. (n.d.). <u>Homepage</u>. GCF Task Force; University of Colorado Boulder.
  - Subnational collaboration of 39 states and provinces working to protect tropical forests, reduce emissions from deforestation and forest degradation, and promote realistic pathways to forest-maintaining rural development. Website details ambitions, activities, and metrics.
- Parajul, R. (2022, January 20). <u>The Infrastructure Act and Forestry: A Brief Overview</u>. Forestry.ces.ncsu.edu; NC State Extension Forestry.
  - Federal spending from the Infrastructure Act in forestry and related sectors
- USDA Forest Service. (n.d.) <u>Bipartisan Infrastructure Law</u>.
  - Outline of Bipartisan Infrastructure Law impacts to USFS spending
- Woodall, C. (2022, March 21). <u>Challenges to Estimating Forest Carbon Arising at the Science-Policy Interface</u> [Conference presentation]. 2022 Forest Carbon Decision Support, FIA National Users Group Focus Session, Virtual Event.
  - Presentation discussing past and present challenges of estimating forest carbon arising at the science-policy interface and how unprecedented levels of interest may represent new opportunities going forward (starts at 5:00 in the video)

# All In for Earth: Scaling Public and Private Ambition

- 1t.org, American Forests, & World Economic Forum. (2022). <u>Technology and MRV in Forest</u> Carbon Finance White Paper. In *1t.org US*.
  - Report examining the challenges and opportunities in the existing MRV landscape, highlighting technologies, technology providers, and market leaders who are working to increase efficiency and rigor in the MRV process

- Belair, E. (2021, June 23). <u>Improved Forest Management Carbon Accounting: Using FIA Plot</u>

  <u>Data and a Nearest Neighbor Matching Approach to Create Dynamic Baselines</u>

  [Conference presentation]. 2021 FIA National Users Group Meeting, Virtual Meeting.
  - Presentation discussing how FIA plot data are used by the Nature Conservancy and their Family Forest Carbon Program to reduce carbon emissions through natural climate solutions, such as improved forest management (starts at 53:30 in the video)

Carbon Offset Guide. (n.d.) Carbon Offset Projects.

 Overviews various types of offset projects, including examples, costs, and number of credits issued per project

Carbon Offset Guide. (n.d.) Mandatory & Voluntary Offset Markets.

• Overviews the differences between mandatory and voluntary carbon markets



Figure 3. Cap-and-Trade Market Activities and Offsetting: Forestry activities that increase the carbon dioxide absorption of forests include afforestation, reforestation, active forest management, or avoided deforestation. (FCCP 2022)

Climate Focus. (2022). The Voluntary Carbon Market Explained. VCMprimer.org.

 Publication serves as a "primer" for those engaged in the voluntary carbon market (VCM) and seeks to facilitate a better understanding and increased strategic engagement of governments in the VCM

Domke, G. (2021, June 23). <u>Greenhouse Gas Inventory Update: Estimates at the National level & Finer Spatial Scales</u> [Conference presentation]. 2021 FIA National Users Group Meeting, Virtual Meeting.

 Presentation discussing how carbon stocks are changing, using maps and graphs showing national and state level information, as well as advancements in carbon science and accounting (starts at 2:30 in the video)

- Einhorn, G., Emsley, D., Fox, J., Gladstone, J., Hingorani, S., Rowe, C., & Stolle, F. (2021, June 4). How monitoring can spur investment in land restoration. World Economic Forum.
  - Article outlining how showing the results of restoration work in an independent, global and comparative way, can inspire public and private sector actors to invest larger sums in restoration as a part of their net-zero, nature-positive activities
- Goergen, M., O'Connor, J., Sonne Hall, E. (2021, January 18). <u>Forest Product LCAs</u> [Webinar]. FCWG Membership Knowledge Transfer Special Session, Michigan State University Forest Carbon and Climate Program.
  - Webinar recording and summary document featuring key takeaways, talking points, and additional resources from the Forest Climate Working Group's (FCWG) Membership Knowledge Transfer Special Session presentation on Life-cycle Analysis (LCA) of forest products and their use to support a shared understanding of the LCA process for calculating embodied carbon and what makes for strong LCA analysis
- Kreye, M. (2022, March 25). Forest Carbon Markets: Who are They For? <u>The challenges</u>, <u>Opportunities and Ethics of Financializing Ecological Services</u> [Conference presentation]. 2022 Forest Carbon Decision Support, FIA National Users Group Focus Session, Virtual Event.
  - Presentation addresses market failure in family forest carbon and introduces the Forest Owner Carbon and Climate Education Program (FOCCE) which was designed to empower landowners through a diverse network of strategies (starts at 17:50 in the video)

Natural Climate Solutions Alliance. (2021). Natural Climate Solutions for Corporates.

- High-level guide to NCS in corporate commitments and the credible use of NCS credits by private sector actors, including demand-side eligibility, NCS supply, markets & policy, and communicating climate strategies that include NCS
- Sleep, D., Cremmins, B. (2021, June 2). <u>Private Sector Investments and Assurances for Climate-smart Forestry</u> [Webinar]. FCWG 2020-21 Learning Exchange Series, Michigan State University Forest Carbon and Climate Program.
  - Webinar recording, presentation slides, and numerous links to related resources exploring the current state of private sector interest and action in climate change mitigation interventions, as well as investment and assurances required to achieve intended outcomes

World Economic Forum (2021). <u>Investing in Forests: The Business Case</u>.

• Report outlining the benefits, opportunities, applications, and impact of corporate investments in forest conservation and restoration

## Tree Talk: Getting to the Root of It

Cities4Forests. (n.d.) <u>Urban Forests for Healthier Cities: Policy, Planning, Regulations, and Institutional Arrangements.</u>

- Slide deck style learning guide covers the basics of urban forestry with a deeper look into context, stakeholders, policy, and management plans
- Ellis, A. (2022, March 23). <u>i-Tree: Putting USFS Urban Forest Science in the Hands of Users</u>
  [Conference presentation]. 2022 Forest Carbon Decision Support, FIA National Users
  Group Focus Session, Virtual Event.
  - Presentation covering suite of five iTree user tools and their applications (starts at 46:45 in the video)
- Janowiak, M. et al. 2021. <u>Climate adaptation actions for urban forests and human health</u>. Gen. Tech. Rep. NRS-203. Madison, WI: U.S. Department of Agriculture, Forest Service, Northern Research Station. 115 p.
  - Report synthesizing adaptation actions to address climate change in urban forest management and promote human health and well-being through nature-based solutions

American Forests. (n.d.). *Tree Equity Score*. American Forests.

 The Tree Equity Score tool provides a social-equity-focused narrative, goals and a guide path for building understanding, commitment, and action around Tree Equity in cities across the US

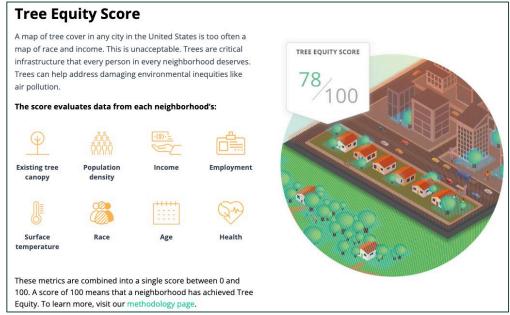


Figure 4. Screenshot from tree-equityscore.org describing the basic methodology behind determining a tree equity score.

(American Forests 2022)

USDA Forest Service. (n.d.) Urban Forests.

 Outlines basics of urban forests and the challenges they face, including framing on climate stressors and resilience

#### **Next-Generation Leadership**

- Graf, M.-C., Daud, S., Balakrishnan, V., Lakhani, H., & Prowse, L. (2022, April 22). <u>Why we need a diverse range of decision-makers to progress climate negotiations</u>. World Economic Forum.
  - Article discussing how current climate negotiations need to be opened up to fresh
    perspectives from underrepresented groups and argues that efforts to correct inequities
    must adopt an intergenerational lens if they are to fulfil their potential

Green Business Bureau. (2020, March 25). How To Be A Successful Ecopreneur.

 Webpage describing what an ecopreneur is, as well as the triple bottom line, and examples of types of businesses started by them

Kaiser, F. (2021, April 19). <u>A new generation of young people is putting the planet first. Here's</u> everything you need to know. World Economic Forum.

 Article about how a youth-led movement known as Generation Restoration is bringing about real, concrete change towards a healthy planet and the launch of World Economic Forum's #GenerationRestoration Youth Challenge to support young ecopreneurs

Salesforce. "The Ecopreneurs," <u>A New Salesforce+ Series Debuts Featuring Global Innovators</u>
<a href="Combating Climate Change">Combating Climate Change</a>. (n.d.)

 Article describing a new docu-style series presented by Salesforce introducing some of the perspectives in the show, as well as the concept of ecopreneurship

Wathuti, E., & Prowse, L. (2022, February 9).

<u>Stop calling young people "leaders of tomorrow"</u> World Economic Forum.

 Article outlining how when youth-led solutions are underfunded or excluded from informing climate negotiations and implementation processes, it undermines efforts. It further outlines how young climate activists will be monitoring how the billions pledged at COP26 are responsibly allocated to fund grassroots organizations and local communities



Figure 5. Elizabeth Wathuti meeting 8-year-old Delphine Fraser following the COP26 opening ceremony. Source: weforum.org

## Branching Out: Unlocking the Global Potential

1t.org. (n.d.). Regional engagement. 1t.org. Retrieved June 21, 2022.

- 1t.org regional engagement platforms overview
- DeLyser, K. and C. Papa (2022, March 23). <u>Integrating FIA Data in Landscape-Scale Carbon</u>
  <u>Modeling</u> [Conference presentation]. 2022 Forest Carbon Decision Support, FIA National
  Users Group Focus Session, Virtual Event.
  - Presentation discussing American Forest, MSU FCCP, and NIACS landscape-level carbon modeling initiative using the Canadian Forest Sector Carbon Budget Model (CBM-CFS3) in seven US states (starts at 1:03 in the video)
- Mina, M., Messier, C., Duveneck, M. J., Fortin, M. J., & Aquilué, N. (2022). <u>Managing for the unexpected: Building resilient forest landscapes to cope with global change</u>. *Global Change Biology*.
  - Peer-reviewed study investigating how expected and unexpected variations in climate and biotic disturbances affect ecological resilience and carbon storage in forests at a landscape scale, with global implications for strategic planning of management interventions
- Puettmann, M., Ganguly, I. (2022, April 7). <u>Recent Findings on Building-Scale Carbon LCAs and Demand-Driven Landscape Impacts</u> [Webinar]. FCWG 2021-22 Learning Exchange Series, Michigan State University Forest Carbon and Climate Program.
  - Webinar recording and presentation slides exploring recent findings on building-scale carbon LCAs and demand-driven landscape impacts, with comparisons drawn for various regions across the globe as well as within the US
- Schwab, N., & Jani, B. (2022, March 23). Why forest restoration is key to India's climate goals. World Economic Forum.
  - Article discussing India's commitment to create an additional carbon sink of 2.5-3 billion metric tons of CO<sub>2</sub> equivalent through additional forest and tree cover, restoring 26 million hectares of land by 2030, and the World Economic Forum launch of the 1t.org India Platform to support these efforts



Figure 6 - Forest landscapes, such as this one in the north-eastern state of Meghalaya, are at the heart of India's ambitious climate commitments. (source: 1t.org)

Schwab, N., & Reber, F. (2020, November 24). Why accelerating ecosystem restoration in the Sahel must be a priority this decade. World Economic Forum.

 Article discussing need for more and faster action to meet the Sustainable Development Goals in the Sahel, the role of scaling agroforestry and regeneration to meet these goals, and the importance of private sector investment and support to realize environmental and economic opportunities

Van Bronkhorst, Bernice. (2022) <u>Global Carbon Pricing Generating Record Revenues but Much Potential Remains Untapped</u>. Originally published on the World Bank 2022 Carbon Pricing Report Launch.

 Blog post discussing carbon pricing, esp. within the context of the COP26 conference and the latest IPCC report

Zwick, S. (2019, September 19). *The Story of the Surui Forest Carbon Project*. Ecosystem Marketplace.

 An example of a successful carbon crediting project in the Brazilian Amazon, primarily via avoided conversion

# Onwards and Upwards

Clay, K., & Cooper, L. (2022). <u>Safeguarding against Harm in a Climate-Smart Forest Economy:</u>
<u>Definitions, Challenges, and Solutions</u>. *Sustainability, 14*(7), 4209.

• Research article aims to identify and build consensus on the definitions, challenges, and solutions relevant to the assessment, planning, and implementation of CSFE (climatesmart forest economy) safeguards

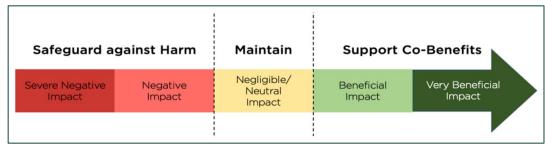


Figure 7 - Climate Smart Forest Economy (CSFE) safeguard spectrum from harm to co-benefits. Credit: Clay & Cooper 2022

Forest Carbon and Climate Program. (n.d.). <u>FCCP Open Resource Library (ORL)</u>. Department of Forestry; Michigan State University.

 Access to free recorded webinars, related resources and materials, as well as original free for use (with citation) educational imagery, tools, and content regarding topics of forests and climate created for professional audiences

The Integrity Council for the Voluntary Carbon Market. (2022). <u>ICVCM - Transparency for Voluntary Carbon Markets</u>, <u>Offsets & Credits</u>. ICVCM.

 An independent governance body for the voluntary carbon market who are working to issue Core Carbon Principles (CCPs) and an Assessment Framework (AF) to set new threshold standards for high-quality carbon credits, provide guidance on how to apply them, and define which carbon-crediting programs and methodology types are CCPeligible