SFI'S CONSERVATION IMPACT

A DECADE OF SUCCESS

SUSTAINABLE FORESTRY INITIATIVE

SFI-00001

Innovative conservation research is critical to ensuring continued improvement in sustainable forestry. With over 350 million acres (140 million hectares) certified to the Sustainable Forestry Initiative (SFI) Forest Management Standard[1] in North America, and tens of millions more positively influenced by SFI Fiber Sourcing, SFI and SFI-certified organizations have the scale and reach to support tremendous research.

In fact, SFI-certified organizations *must* support forest and conservation research (SFI is the only forest certification standard with this requirement). In total, SFI-certified organizations have invested over $1.8 billion in such research since 1995[2] – an average of about $60 million per year. This research, driven in part by requirements in the SFI standard, generates robust results with lasting benefits for the forest and conservation sector.

THE SFI CONSERVATION IMPACT PROJECT

The SFI Conservation Impact Project supports research above and beyond the $60 million invested annually by SFI-certified organizations. In this way, SFI supports research to identify best practices in pursuit of sustainability outcomes, to enumerate those outcomes, and in the process, to generate new collaborations within the research, academic, and conservation communities.

This report outlines some of our core conservation results, achieved over the past ten years, and founded on over 25 years of leadership in sustainable forest management.

This type of research has many benefits:

- Society obtains a deeper insight into the value of sustainable forest management.
- SFI-certified organizations can leverage and convey positive conservation outcomes resulting from their certification to SFI standards.
- Consumers can make better choices for people and the planet.
- SFI acquires essential information that enables it to continually improve its standards.

Learn more: forests.org/conservation-impact-project
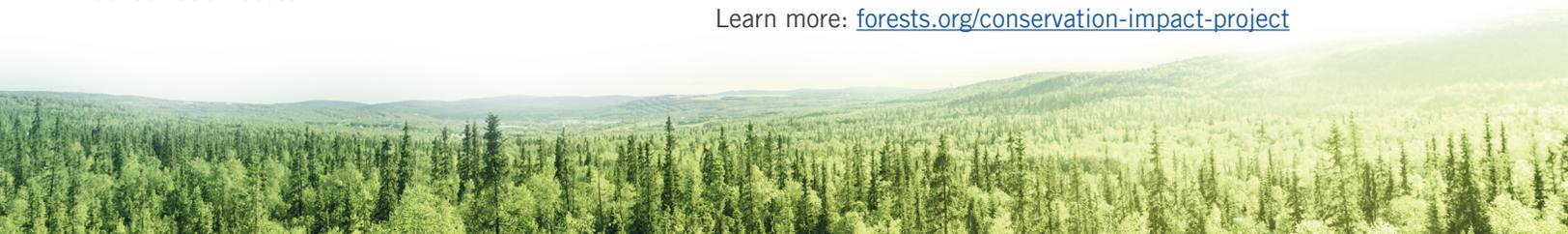
CLIMATE CHANGE AND CARBON

Sustainably managed forests are among the most powerful tools available to address risks and impacts of climate change. SFI's enormous scale means that forests certified to the SFI Forest Management standard absorb carbon at impressive rates, and sequester carbon both on-site and in long-lived products, making them an essential element of strategies to reduce the impacts of climate change.

Climate change and carbon are captured under the United Nations global sustainability goal 13 ("Take urgent action to combat climate change and its impacts"). Environment, social and governance (ESG) reporting also considers climate change and carbon impacts as a key non-financial factor to identify material risks and growth opportunities for companies.

WHY IT MATTERS

Climate change is one of our most pressing global challenges. Forest fires have long played a role in the evolution and function of natural ecosystems, but due to prolonged drought conditions, increasing temperatures and other associated climate change factors, there is now an increased risk of catastrophic fires and other climate-related impacts that can have dire consequences for our forests, wildlife, and communities.

The value of sustainably managed forests toward mitigating and combating the impacts of climate change, particularly when long-lived forest products are considered, has gained recent and increased appreciation. Certification is one of the best ways to ensure that those products come from sustainably managed forests. It is therefore imperative that the benefits of well-managed SFI-certified forests to climate change adaptation and mitigation be demonstrated through robust peer-reviewed science.

FAST FACTS

- In total, SFI certified forestlands in the U.S. and Canada store approximately 250,000 million metric tons (MMT) of carbon dioxide equivalents (CO_2e) – an amount roughly equivalent to the total emissions of all the world's cars over a period of 38 years. This includes carbon stored in above ground forest biomass (trees, shrubs) and in the underlying soils. *This research was done in a collaboration between the National Council for Air and Stream Improvement (NCASI) and SFI, using published data from USDA and McMaster University.*

- Soil Organic Carbon and tree biomass increase concurrently during reforestation. (Reforestation is a requirement of the SFI Forest Management Standard.) *Research conducted in collaboration with American Forests.*

- The SFI Standard is an effective tool when increasing carbon storage or sequestration is a desired management outcome. *Research conducted in collaboration with the University of Maine.*

PROJECT HIGHLIGHTS

SASKATCHEWAN RESEARCH COUNCIL: CARBON SEQUESTRATION IN UPLAND BOREAL FORESTS AND WETLANDS

SFI collaborated with The Saskatchewan Research Council and other partners to develop a methodology for sampling peat in forested wetlands. Wetlands on SFI-certified forests are conserved and protected, and though they may make up a small fraction of the landscape, they contain most of its soil carbon. On the boreal landscape where the methodology was tested, over 250 MMT of soil organic carbon (912.5 MMT CO_2e) was stored within wetlands.
Learn more: forests.org/grantsaskatchewanresearchcouncil

MANOMET: MONITORING AND MANAGING FOR A CHANGING CLIMATE

SFI collaborated with Manomet to develop checklists, management tools, and techniques for monitoring climate change and forest response, and a structure for the integration of climate factors into forest management plans. Results provide a step-by-step approach to evaluating the vulnerabilities of forest management to changes in climate, disturbance regimes, and vegetation.
Learn more: forests.org/grantmanomet

SASKATCHEWAN RESEARCH COUNCIL: CARBON STOCKS AND STOCK CHANGES ON SFI-CERTIFIED LANDSCAPES IN CANADA

SFI collaborated with the Saskatchewan Research Council and Natural Resources Canada to quantify carbon storage in different forest ecosystems using national and regional data. This project helped develop best available forest-carbon inventories for parts of British Columbia, Alberta, Saskatchewan, Manitoba, and parts of New Brunswick. The Saskatchewan Research Council, working with carbon accounting teams from Natural Resources Canada's Canadian Forest Service, ran the model from 1990 to 2016, and included historical annual disturbances by fire, harvesting, and land-use change (where applicable).
Learn more: forests.org/grantsaskatchewanresearchcouncilmitigating

KEEPING MAINE'S FORESTS: PREPARING FOR THE CARBON MARKET IN FORESTS CERTIFIED TO THE SFI STANDARD

SFI collaborated with Keeping Maine's Forests to determine the degree to which SFI certification meets the documentation criteria of current carbon credit programs and developed recommendations for how carbon credit programs can better align with SFI certification.
Learn more: forests.org/grantmainesforests

AMERICAN FORESTS: A PRACTICE-BASED APPROACH TO INCREASING FOREST CARBON MITIGATION THROUGH FOREST SOILS

SFI collaborated with American Forests to develop an approach to include soil in forest carbon calculations, as soil can account for a sizeable amount of carbon storage. This allows for better understanding of whole-ecosystem carbon dynamics, as well as the impacts of forest management on the entire forest carbon pool. American Forests created decision support tools to identify areas of high vulnerability and opportunity for soil carbon impacts.
Learn more: forests.org/grant-american-forests-forest-soils

THE NORTH AMERICAN SFI FOOTPRINT STORES
250,000 MILLION METRIC TONS OF CO_2e
EQUIVALENT TO THE EMISSIONS OF
ALL THE WORLD'S CARS FOR ABOUT 38 YEARS

BIODIVERSITY

SFI-certified forests provide a mix of ecosystems, with a diversity of forest cover types that support a wide range of forest-dwelling species.

WHY IT MATTERS

Biodiversity provides the foundational elements of what a healthy forest is and how it functions. Healthy and biodiverse forests conserve soil and water, facilitate carbon sequestration and nutrient cycling, and support pollinators and natural pest predators like birds. Without biodiversity, the entire forest ecosystem is jeopardized.

SFI standards and SFI-certified organizations support biodiversity in multiple ways: by ensuring diversity of native forest cover types, ages, and size classes, by incorporating analyses of diversity at landscape levels, by providing habitat for multiple species, including species at risk, and by facilitating conditions that help forests recycle nutrients, purify water, and filter air.

Biodiversity is captured under the United Nations global sustainability goal 15 ("Promote sustainable use of terrestrial ecosystems [...] and halt biodiversity loss"). Environment, social and governance (ESG) reporting also considers biodiversity impacts and sustainability as a key non-financial factor to identify material risks and growth opportunities for companies.

FAST FACTS

- SFI-certified forests overlap significantly with local, regional, and national conservation priorities, which means that SFI-certified organizations help to maintain those areas as part of their requirements to conserve forests of exceptional conservation value, as well as forests that include cultural, recreational, or other set-aside areas.
  Research conducted in collaboration with NatureServe.

- In one study area in the U.S. Southeast, many focal bird species [or bird species "of concern"] were found to be more abundant within SFI-certified forests than within the surrounding landscape. Bird species included Prairie Warbler, Worm-eating Warbler, Kentucky Warbler, Brown-headed Nuthatch, and Wood Thrush.
  Research conducted in collaboration with American Bird Conservancy.

- SFI-certified lands contribute to connectivity at a regional scale, resilience to climate change, and maintenance of irreplaceable landscapes.
 *Research conducted in collaboration with North Carolina State University.*

PROJECT HIGHLIGHTS

AMERICAN BIRD CONSERVANCY: MANAGED FORESTS FOR THE BIRDS, PHASE II

SFI collaborated with the American Bird Conservancy to examine the needs of a wide variety of bird species in decline, to help build understanding of the links between broader ecosystem health and sustainable forest management. The project built on and further refined estimates of conservation values in the American Bird Conservancy's five pilot areas in the U.S. Southeast.
Learn more: forests.org/grantabcforestbirds
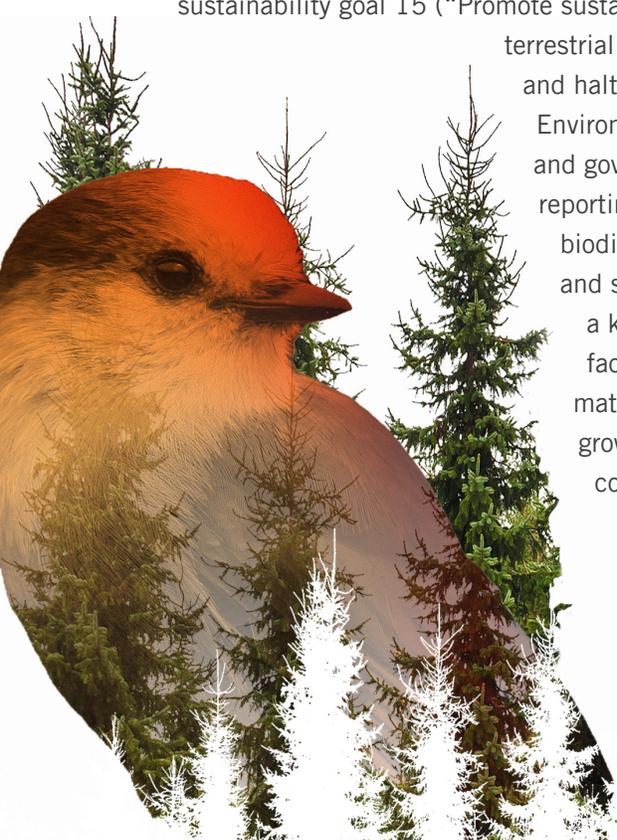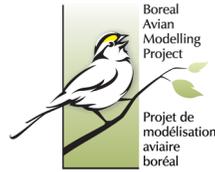
BOREAL AVIAN MODELLING PROJECT: APPLYING DATA-DRIVEN MEASURES TO EVALUATE AND IMPROVE THE CONSERVATION VALUE OF MANAGED FORESTS FOR BIRDS

SFI collaborated with the Boreal Avian Modelling Project to estimate the contribution of forest stands and landscapes to regional bird biodiversity using various metrics to quantify abundance, richness, rarity, and distinctiveness of avian species. These metrics can also be modeled in different types of forests and at different scales to estimate the conservation value of additional landscapes.
Learn more: forests.org/grantborealavianmodelling

FRI RESEARCH: ENHANCING CARIBOU HABITAT WITH ACTIVE FOREST MANAGEMENT

SFI collaborated with fRI Research to investigate if timber harvesting and silviculture practices can be used to reduce the occurrence of primary prey (deer, moose, elk) in cut blocks, as primary prey attracts predators, which in turn impact caribou populations – a species at risk.
Learn more: forests.org/grantfri

NATURESERVE: MEASURING THE CONSERVATION VALUE OF SFI-CERTIFIED FORESTS STRADDLING THE MAINE-NEW BRUNSWICK BORDER

SFI collaborated with NatureServe to quantify the conservation impact of SFI-certified lands by developing nine scalable metrics to measure biodiversity and other important conservation values on managed forest landscapes.
Learn more: forests.org/grant-natureserve-biodiversity

NORTH CAROLINA STATE UNIVERSITY: STUDYING CLIMATE CHANGE MITIGATION AND PREVENTING BIODIVERSITY LOSS IN FORESTS

SFI collaborated with North Carolina State University to forecast the trajectory of forest change under different climate scenarios in the Piedmont and Sandhills ecoregions of North Carolina. The project quantified how these forests, especially restored longleaf pine and SFI-certified sustainably managed forests, contribute to landscape connectivity.
Learn more: forests.org/grant-ncsu

NATURE CONSERVANCY OF CANADA: INVESTIGATING BIODIVERSITY IMPACTS OF FOREST MANAGEMENT ON VERNAL POOLS IN THE KENAUK RESERVE

SFI collaborated with the Nature Conservancy of Canada to examine unique biodiversity aspects of the Kenauk reserve, an area managed to SFI's Forest Management Standard. SFI-certified forests often house seasonal small water bodies, or "vernal pools", which foster a unique diversity of plants and animals. Because these are important elements for biodiversity, SFI collaborated with partners to better track and quantify such features and to better understand their seasonal dynamics using LiDAR.
Learn more: forests.org/grantnckenauk

UNIVERSITY OF NORTHERN BRITISH COLUMBIA: REMOTE-SENSING LiDAR TO MEASURE BIODIVERSITY ON LANDS CERTIFIED TO THE SFI STANDARD

SFI collaborated with the University of Northern British Columbia to develop and refine the application of LiDAR technology to estimate biodiversity in forested landscapes. Although LiDAR was found to lack the capabilities and resolution needed to quantify or generate a useful index of biodiversity for forest management, the technology continues to have great application in studying the complexity of vegetation that makes up a forest (ex. size and height of trees, height of herbaceous vegetation, understory, overstory, etc.)
Learn more: forests.org/grantunbc

WATER QUALITY AND QUANTITY

SFI's standards require certified organizations to protect and maintain water resources, to meet or exceed all applicable federal, provincial, state and local water quality laws, and to meet or exceed best management practices for forest operations occurring near water. SFI Conservation Impact collaborations related to water have focused on the benefits to water quality and quantity of SFI certification, and on freshwater species that inhabit waters within SFI-certified forests.

WHY IT MATTERS

SFI certified forests in North America encompass a vast array of water resources including lakes, rivers, streams, marshes, bogs, fens, and swamps. These waters nourish growing forests and maintain both the flora and fauna that live within them, as well as provide life-sustaining freshwater resources to human populations. Well managed forests filter water that recharges aquifers, and store and release water to help prevent flooding and droughts, stabilize soils, and effectively limit erosion.

Water quality and quantity are both captured under the United Nations global sustainability goal 6 ("Clean water and sanitation") and goal 14 ("Life below water"). Further, the availability of fresh clean water is vital to all other facets of global sustainability. Environment, social and governance (ESG) reporting also considers water impacts and sustainability as a key non-financial factor to identify material risks and growth opportunities for companies.

FAST FACTS

- The SFI footprint in North America protects over 1.2 million miles (2 million kilometers) of streams and rivers. That's enough to wrap around the Earth over 50 times. *Research conducted in collaboration with NCASI.*
- Special management zones around watercourses (which are required under the SFI Forest Management Standard) are associated with better water quality after harvest. *Research conducted in collaboration with Virginia Tech.*
- Over 730 billion cubic yards (559 billion cubic meters) of clean water flows through SFI-certified forests every year. That's enough to sustain Niagara Falls for more than seven years. *Research conducted in collaboration with NCASI.*

PROJECT HIGHLIGHTS

CONSERVATION MANAGEMENT INSTITUTE (CMI) AT VIRGINIA TECH: STATE FORESTRY BMPS, SOIL EROSION AND SEDIMENT DELIVERY

SFI collaborated with the Conservation Management Institute at Virginia Tech to develop time series maps of metrics related to water quality. Maps depicting SFI-certified Fiber Sourcing, and SFI-certified Forest Management density were created to further analyze the relationship between the implementation of best management practices and SFI Forest Management and Fiber Sourcing certification over time in Virginia. Learn more: forests.org/grantvirginiatech

THE SFI FOOTPRINT IN NORTH AMERICA
PROTECTS OVER
1.2 MILLION MILES
OF STREAMS AND RIVERS

ENOUGH TO WRAP AROUND THE EARTH
OVER 50 TIMES

COALITIONS AND COLLABORATIVES: EXPLORING THE FINANCIAL VALUE OF ECOSYSTEM SERVICES OF SFI CERTIFIED FORESTS

SFI collaborated with Coalitions and Collaboratives to quantify the water benefits of restoring 12,292 acres of post-fire forestland. The best estimate of reduced runoff was 2,990 acre-feet (3,687,000 liters) of increased aquifer recharge per year, which would be valued at $1,166,100 per year in ecosystem service (based on a median price of $390 per acre-foot for aquifer recharge). The proposed post-fire reforestation would result in 4,917 metric tons of avoided erosion/stream sedimentation per year.

Learn more: forests.org/grant-coco

FRASER BASIN COUNCIL: MONITORING WATER TEMPERATURES FOR STEELHEAD IN RELATION TO FOREST MANAGEMENT PRACTICES

SFI collaborated with the Fraser Basin Council in British Columbia, Canada, to examine the effects of sustainable forest management and natural disturbances on water resources. The project found that forest management had no significant negative effects on stream temperatures, an important metric for salmon. The project also helped identify and protect cold-water sources that are needed to mitigate potentially lethal temperatures (approaching 25 C) for fish populations that can occur in late summer.

Learn more: forests.org/grantfraserbasincouncil

NATURE CONSERVANCY OF CANADA: THE ACTIVE RIVER AREA

SFI collaborated with the Nature Conservancy of Canada to develop two management decision support tools to help plan activities to ensure the protection of critical water values. First, the Active River Area tool helps identify riparian areas and freshwater conservation and restoration strategies. It can be used when developing management plans in and around water-sensitive areas. Next, the Freshwater Resilience to Climate Change analysis tool helps identify priority watersheds for conservation and restoration, by identifying those watersheds most highly resilient to current and future changes in climate.

Learn more: forests.org/grantnccactive

UNIVERSITY OF GEORGIA: QUANTIFYING IMPACTS OF SFI FIBER SOURCING

SFI collaborated with the University of Georgia to quantify the impacts of SFI's Fiber Sourcing standards on Georgia's Best Management Practices (BMP) compliance rate across different types of ownerships, like private land holdings, those managed by land management companies, etc. The project found that SFI Fiber Sourcing contributes positively to water quality BMP implementation rates in Georgia. The mean implementation rate of forestry BMPs in Georgia increased from 65% in 1991 to above 90% since 2004, and this increase is shown to be directly correlated to SFI Fiber Sourcing requirements and logger training in the state.

Learn more: forests.org/grantuofgeorgia

THE SFI CONSERVATION IMPACT SOUNDING BOARD

The Conservation Impact Sounding Board was formed to harness and focus the community of partners engaged in, or seeking to inform, SFI's Conservation Impact Project work. It helps shape SFI's research by promoting interaction between project leaders and experts from diverse backgrounds. In this way, the Sounding Board helps SFI to clarify research outcomes, ensure the use of credible science, and generate relevant results which resonate with key audiences. To aid in these objectives, the Sounding Board has a deliberate open-door policy with an informal structure to facilitate the broadest possible engagement.

THE SFI CONSERVATION GRANTS PROGRAM

The SFI Conservation Grants Program is a critical tool for advancing the SFI Conservation Impact Project, as it funds research that helps to quantify the benefits of SFI certification relative to climate change and carbon, biodiversity, and water quantity and quality.
Each SFI conservation grant project requires the participation of at least one SFI-certified organization or SFI Implementation Committee.
Learn more: forests.org/conservationgrants

CONTACT US
forests.org | info@forests.org

1 - As of May 7, 2022
2- As of July, 2021
3 - 53 billion cars at 4.64 metric tons of CO_2e per year. https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references