



2023

Sustainability Report



What's inside

- i. **Message from our Global Head**
- ii. **Message from our Head of Sustainability**
- iii. **Company profile**
 1. **Sustainability strategy**
 2. **Nature**
 3. **Climate**
 4. **People**
 5. **Partnerships**
6. **Portfolio in focus:**
 - a. **United States**
 - b. **South America**
 - c. **Europe**
 - d. **Asia Pacific**
7. **Closing statement**

This report contains interactive elements such as navigation and global and regional maps. Please download the document and open it in Adobe Acrobat for the optimal reading experience. If you don't have Adobe Acrobat, you can download it here for free:



[Free Adobe Acrobat download](#)





Martin Davies
Global Head of Nuveen Natural Capital

Nuveen Natural Capital's 2023 Sustainability Report demonstrates our commitment to transparently reporting our sustainability progress across Nature, Climate and People in our global farmland, timberland and environmental restoration operations.

Investing to meet the demands of the world's increasing population

Natural capital assets play a major role in providing an expanding world population with food, fiber and shelter, which support long-term demand for agricultural and forest products. Sustained growth in food, timber and fiber production must be achieved while also reducing emissions, mitigating the world's biodiversity crisis, optimizing resource efficiency, and engaging local communities and global stakeholders.

As our industry faces these challenges, we are encouraged by recent positive developments affecting our sector. For example, in 2022:

- The IPCC's Sixth Assessment Report, *Climate Change 2022: Mitigation of Climate Change* expressed "high confidence" that the Agriculture, Forestry and Other Land Use sector can contribute 8 to 14 Gt CO₂e per year of climate mitigation from a combination of emission reduction and enhanced removals.¹ A key to progress will be investments by our industry in emission-reduction technologies and operational approaches.
- Nearly 200 countries ratified the Kunming-Montreal Global Biodiversity Framework and its associated goals and targets. Importantly, the Framework provides guidance and more than 300 indicators for monitoring progress.²
- There were \$10.6 billion in deals involving agricultural technology,³ which reflects the level of innovation in this thriving sector. Some advances, such as robotics and sensors,

can help to boost production efficiency, and are already applied on some of our managed assets. Other advances, such as predictive analytics and enhanced satellite imagery tools, will contribute to reducing synthetic inputs and estimating carbon stock and sequestration.

Embedding Nature, Climate, People objectives across our business

Such complex objectives require deep local knowledge, pragmatism, and partnerships. As a custodian of natural capital assets, Nuveen Natural Capital embeds Nature, Climate and People considerations across our farmland, timberland, environmental restoration operations, and governance processes. These concerted global efforts across 3 million acres, 40+ crop types and 10+ timber species help us evolve on our sustainability journey.

We are proud to share highlights of our teams' good work in this report.



Cristina Hastings Newsome
Head of Sustainability

Nuveen Natural Capital is on a sustainability journey that began more than a decade ago. Our report describes the many achievements along the way, as well as the current workstreams and objectives.

The path we've travelled thus far — challenging and rewarding

The breadth of our operations — 40+ crops and 10+ timber species across 10 countries — offers an excellent opportunity to bring our Nature, Climate, People vision to life at scale. At the same time, such breadth means that business practices, regulatory regimes and social constructs differ significantly across the portfolio. Accordingly, we are committed to being deliberate, disciplined and iterative in our holistic sustainability approach.

Highlights from our sustainability journey thus far demonstrate a spirit of continuous improvement:

- Adopting the UN-backed Principles for Responsible Investment in Farmland in 2014
- Creating our first online transparency map for farmland in 2017
- Committing to a Zero Deforestation Policy across five biomes in Brazil in 2018

In 2022 and 2023, this journey has continued. Some examples of our progress include:

- Updating our Global Sustainability Policy to include timberland assets and expanding our zero deforestation commitments
- Increasing transparency through an updated interactive map for farmland and publication of four (to date) Faces from the Field video vignettes with tenants and crop managers
- Forging collaborations with a variety of stakeholders, ten of whom have provided testimonials for this report
- Pilot-testing nascent methodologies to contribute to evolving industry standards, including the Taskforce on Nature-related Financial Disclosures (TNFD) draft framework, GHG Protocol's draft Land Sector and Removals Guidance, and natural capital accounting standards

Building upon last year's work, we are upgrading our baselines in 2023 to equip ourselves for the next stage of our sustainability journey: to set targets in 2024 for defined Nature, Climate, People outcomes (*see page 9*).

Moving forward with keen attention to a changing landscape

As we continue on our journey, we must steadfastly pursue our broader objectives of producing sustenance while optimizing resources, minimizing externalities, and engaging with local and global stakeholders. This holistic strategy strives to avoid the unintended consequences which may arise from a single-minded pursuit of one goal. New methodologies, regulations and critiques will challenge us to be flexible in our thinking, courageous in revisiting assumptions, and energetic in keeping pace with important developments.

Going forward we will continue to work in partnership with investors, NGOs, tenants, contractors and our teams in the field.

We are committed to proactive communication and transparency about our progress and will strive for continuous improvement to create more resilient, efficient and environmentally attuned production systems.

Company profile

Nuveen is the global asset management arm of TIAA. Nuveen manages \$1.1 trillion in assets across fixed income, equities, alternatives and solutions-based strategies for over 1,200 institutional clients in 32 countries worldwide.*

Nuveen Natural Capital is Nuveen's land-focused investment manager. We provide investors access to global farmland and timberland opportunities with \$12.3 billion of assets under management* across diverse geographies, crop and tree species, and operating strategies. With over 35 years of investment experience and more than 200+ employees located across 10 countries globally, the platform offers unparalleled geographic reach married with deep sector expertise.

* As of December 2022 in US\$

† Note that such certifications or standards are primarily a function of supply-chain demand, and that crops going directly into the food value chain (as opposed to feed) tend to have higher supply-chain requirements for certification

NUVEEN NATURAL CAPITAL:

200+
employees

590+
properties across
10 countries

78.5%
Timberland portfolio
covered by third-party
standards

60%
Farmland portfolio
covered by third-party
standards†

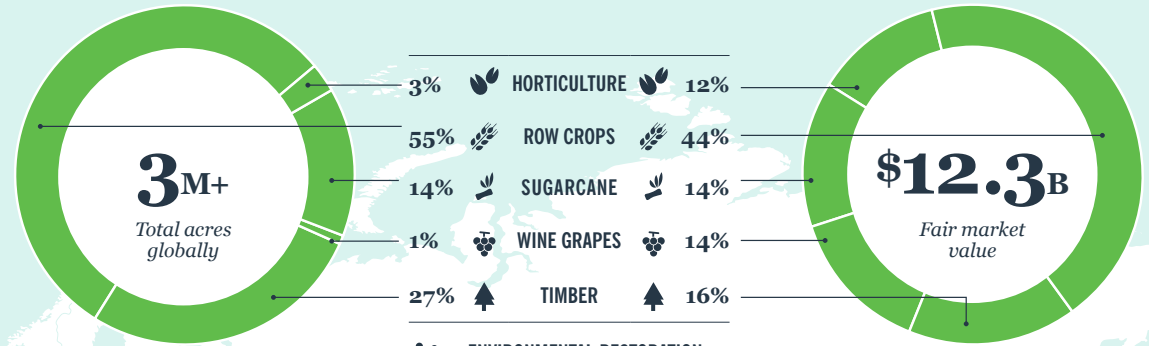
TOTAL PORTFOLIO

(as of December 2022 in US\$)

 Click country names to view statistics

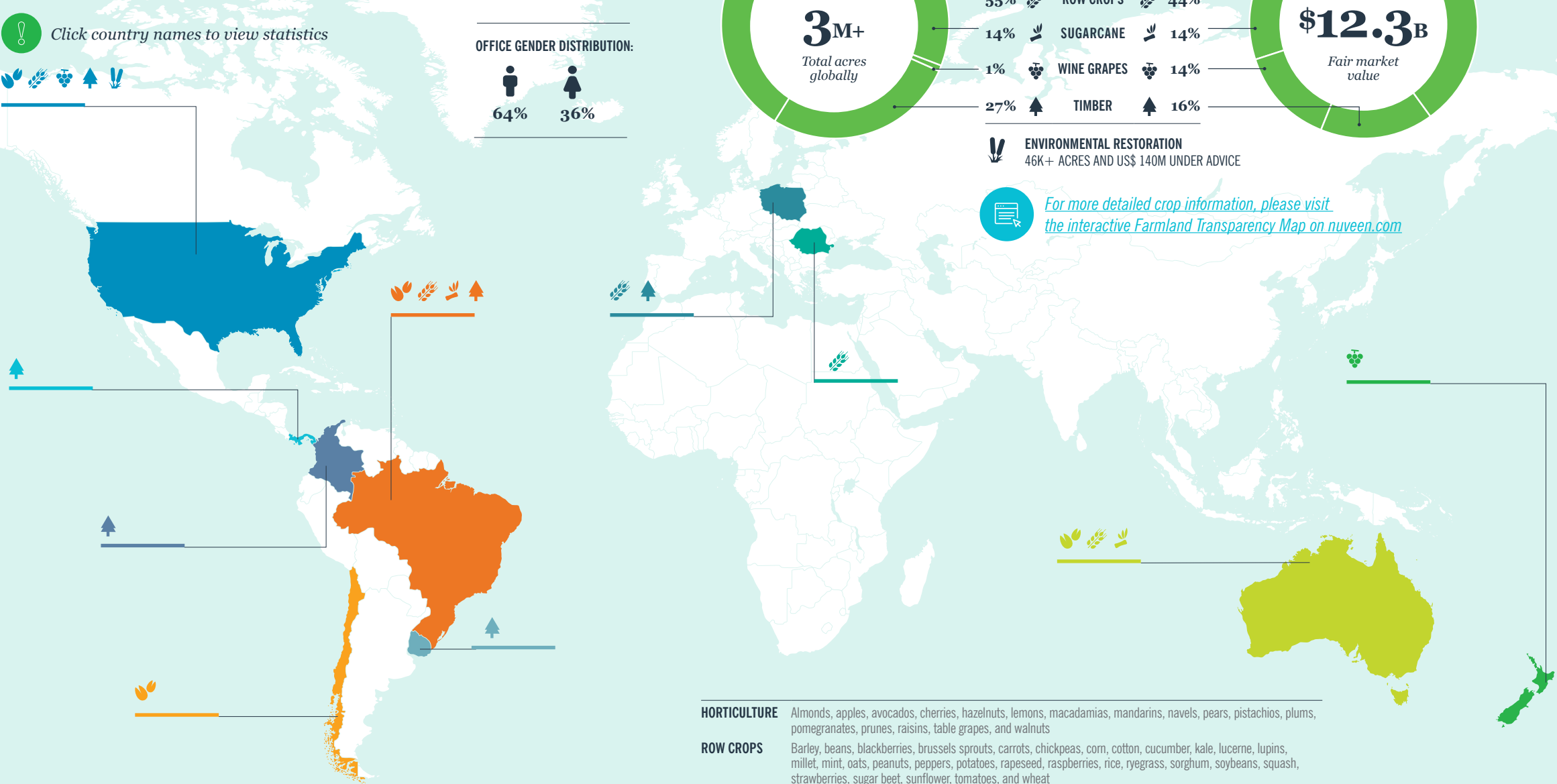


OFFICE GENDER DISTRIBUTION:



 ENVIRONMENTAL RESTORATION
46K+ ACRES AND US\$ 140M UNDER ADVICE

 [For more detailed crop information, please visit the interactive Farmland Transparency Map on nuveen.com](#)



HORTICULTURE Almonds, apples, avocados, cherries, hazelnuts, lemons, macadamias, mandarins, navels, pears, pistachios, plums, pomegranates, prunes, raisins, table grapes, and walnuts

ROW CROPS Barley, beans, blackberries, brussels sprouts, carrots, chickpeas, corn, cotton, cucumber, kale, lucerne, lupins, millet, mint, oats, peanuts, peppers, potatoes, rapeseed, raspberries, rice, ryegrass, sorghum, soybeans, squash, strawberries, sugar beet, sunflower, tomatoes, and wheat

TIMBER Douglas fir, eucalyptus, fine hardwoods, gmelina, hemlock, poplar, red alder, red ceiba, southern yellow pine, and teak

1



Sustainability strategy

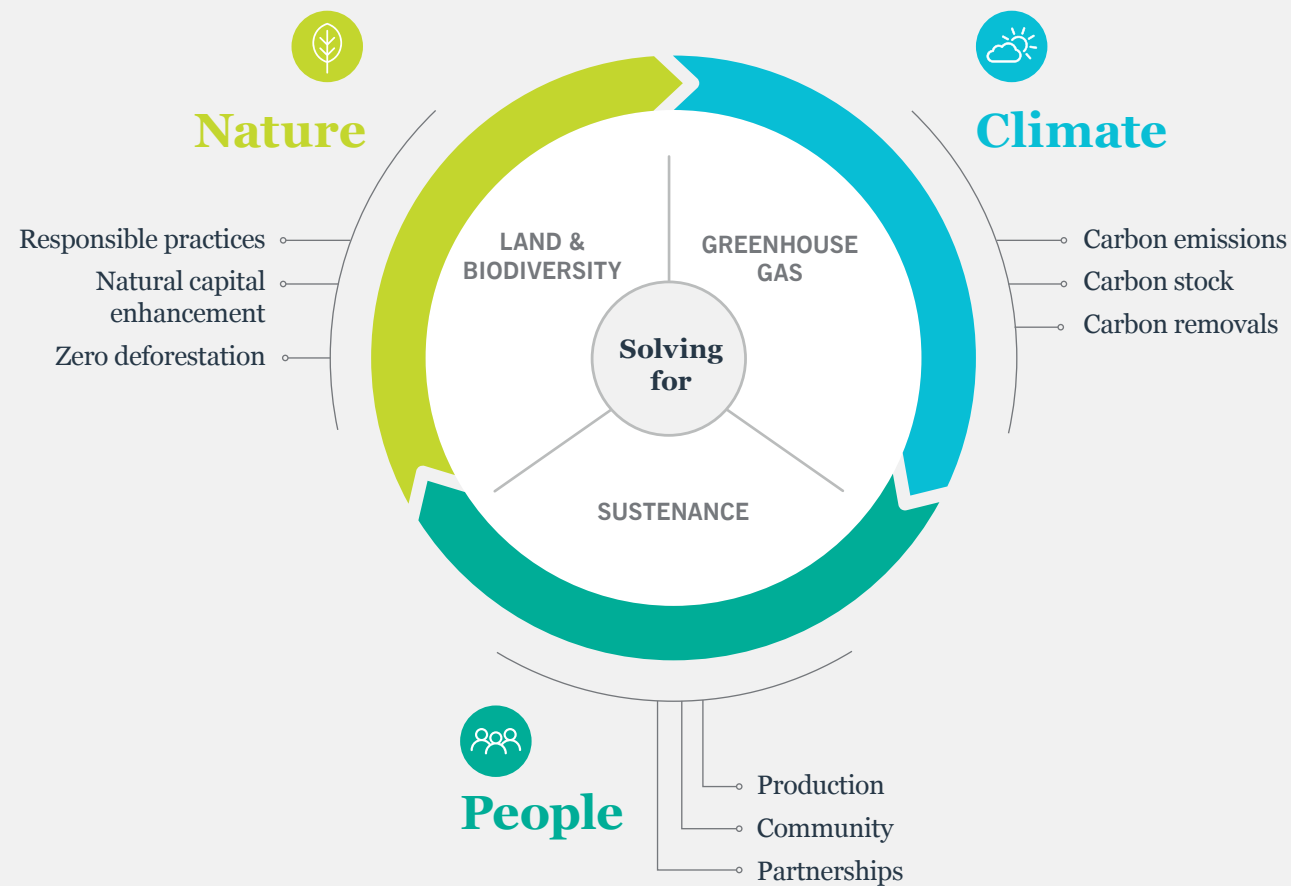




Sustainability strategy

In 2022, Nuveen Natural Capital shared its holistic sustainability strategy, which aims to enhance both long-term productivity and environmental benefits for our farmland and timberland assets.

This strategy, which we refer to as Nature, Climate, People, is built upon experience we have amassed across three decades of land-based investment. The strategy outlines our priorities for contributing to important global goals to enhance ecosystem services, address greenhouse gas emissions, and provide people with vital sustenance, including food, timber and fiber.



TIMELINE

2012 to 2017

First Sustainability Report published

First Sustainability KPIs reported, in alignment with UN PRI for Farmland

Third-party certifications mapped

ESG audits set up in Brazil

Code of Conduct launched in Brazil

First Farmland Transparency Map

2018 to 2020

Zero Deforestation Policy published for Brazil

First carbon removals data published for timberland

Farmland ESG Committee established

Social assessments in place for emerging markets

CSR and dedicated budget set up

ESG Framework v.1 in place

Leading Harvest launched

First greenhouse gas (GHG) emissions estimates published for farmland

2021 to 2022

Nature, Climate, People strategy published

Upgraded transparency resources

Nuveen Natural Capital formed, unifying farmland and timberland

Natural capital balance sheet published for a farmland property

New global collaborations initiated

Piloted the GHG Protocol's Land Sector and Removals Guidance

Global Sustainability Policy launched, including upgraded zero deforestation commitment for material regions

Ongoing in 2023

Responsible practices KPIs per business unit

Pilot natural capital asset register and first top-down biodiversity mapping

Natural capital balance sheet published for a timberland property

GHG emissions methodology upgrade, including timberland emissions

First carbon removals data published for farmland

Taskforce on Nature-related Financial Disclosures (TNFD) pilot for timberland



2024 and beyond

Set targets across Nature, Climate, People

Publish full portfolio natural capital asset register

Increasingly integrate natural capital accounting



Nature



Our approach

As managers of more than 3 million acres of land, we take our stewardship of nature very seriously. Given our footprint, we define nature as encompassing biodiversity, water, land and soils.

We understand the potential for all lands to increase natural capital; this includes “productive” land for generating food, timber and fiber, as well as “supporting” land, which includes native vegetation, buffer zones and wildflower strips. We seek to promote practices that realize such potential through protection, restoration and other nature-positive activities.



In this report

In an effort to understand and quantify natural capital across our portfolio we are employing satellite imagery, information from the Integrated Biodiversity Assessment Tool (IBAT) and data on nature-positive practices gathered at the asset level. This process is helping us build a natural capital asset register ([see preliminary results on page 12](#)).

We completed our first natural capital balance sheet pilot involving a timber property ([see page 14 – 16](#)). This work benefited from an earlier farmland pilot, which was detailed in our 2022 Sustainability Report.



Looking forward

- Build a portfolio-wide natural capital asset register to inform our natural capital baseline
- Deepen our understanding of our assets’ ecosystem services by creating additional natural capital balance sheets for material properties
- Ongoing pilot of the Taskforce on Nature-related Financial Disclosure (TNFD) framework for a timber property
- Review guidance for defining our nature-related targets



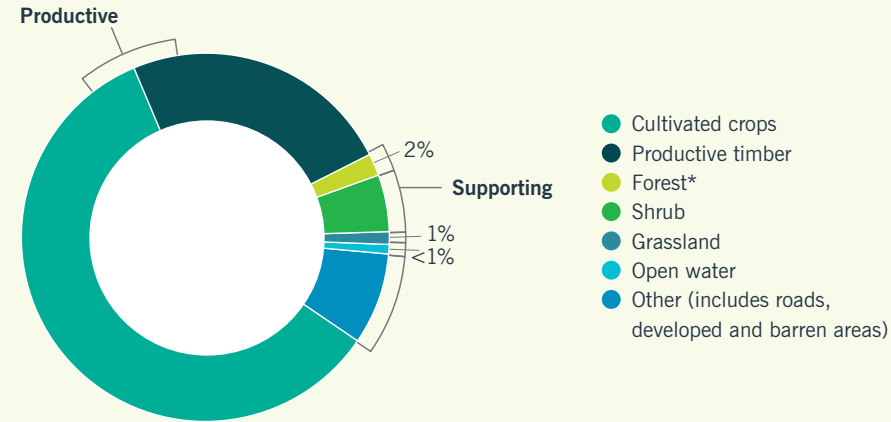
Building a baseline for natural capital

Nuveen Natural Capital has set an ambitious goal of establishing land registers for each asset across our portfolio. Extending beyond basic comparisons between productive and supporting land, these registers will attempt to measure the wide variety of natural land cover types, such as forests, grasslands, shrublands and bodies of water. This will help us establish a natural capital baseline and deepen our understanding of the ecosystem services of each asset.

Nuveen Natural Capital is working with a third-party provider to establish a standardized land cover classification for this project which is based on a combination of satellite imagery and on-the-ground verification. We launched the initial phase of this project on farmland and timberland covering about 200,000 acres. We intend to complete this work for the entire portfolio.

Natural capital asset register

*Pilot area by type of habitat
Total 200,000 acres (farmland and timberland)*



* Forest includes deciduous high/medium carbon density, coniferous high/medium carbon density, wetlands, and riparian

392K+

ESTIMATED tCO₂e
carbon stock in supporting lands across pilot area

Natural capital across our portfolio

130K+

ACRES

supporting land across global timber portfolio

6K+

ACRES

conservation easements on U.S. timberlands

6M+

TREES

planted globally in 2022

5K

ACRES

forests of exceptional conservation value in the U.S.

220K+

ACRES

protected native vegetation within farmland properties in Brazil



Promoting biodiversity

Nuveen Natural Capital is committed to promoting biodiversity-friendly landscapes in which both people and nature can thrive. Achieving this aim requires an understanding of biodiversity at the local level. This is why our work combines a top-down approach, using global biodiversity databases, as well as a bottom-up approach, using mapping and surveying on the ground.

For our **top-down** approach, we use the Integrated Biodiversity Assessment Tool (IBAT), which provides access to the World Database on Protected Areas, IUCN Red List of Threatened Species, and the World Database of Key Biodiversity Areas. With this information, we are better prepared to:

- Detect key indicator species (sensitive to changes in environmental quality) and monitor their population over time
- Point to priority areas for further research and monitoring on the ground, and
- Identify ways to restore, maintain or enhance biodiversity

Across U.S. timberland portfolio⁴

84%

PROPERTIES
are on or within
10 km of a
protected area

67%

PROPERTIES
are on or within
10 km of a Key
Biodiversity Area

30

SPECIES
identified as critically
endangered on or
within 50 km

As part of our **bottom-up** approach, Nuveen Natural Capital has partnered with a wildlife biologist to develop a plan for guiding one of our timberland properties toward intentional management of wildlife and wildlife habitat to increase biodiversity. The vision is to expand this approach to other timber properties in the United States.

Understanding how wildlife use the landscape and which species call this area home, the wildlife biologist reviewed local databases that included species-specific information on the property. She also used her knowledge of the area to refine information obtained from local databases. Site-specific species and habitat data for the property were obtained through habitat assessments and surveys for such species as the northern spotted owl, marbled murrelet, and torrent salamanders. Using all the gathered data, a site-specific biodiversity plan was crafted that aims to:

- Protect fish, wildlife, and plant species and habitats
- Increase species, habitat and structural diversity
- Increase landscape diversity and connectivity

“Providing habitat for the wildlife that call the Lewis & Clark Timberlands home is a fundamental component of sustainable forest management. It is an absolute pleasure to work with the people at Nuveen Natural Capital who embrace this concept and challenge me to find more ways to creatively add to our biodiversity plan.”

Fran Cafferata

Certified Wildlife Biologist® and Owner,
Cafferata Consulting



Accounting for natural capital

Creating a timberland natural capital balance sheet

For a second year, Nuveen Natural Capital has partnered with Economics for the Environment Consultancy (eftec) to inventory and estimate the value of natural capital in selected assets of our portfolio by producing NatCap Statements™ aligned to the BSI 8632:2021 standard (Natural Capital Accounting for Organizations).

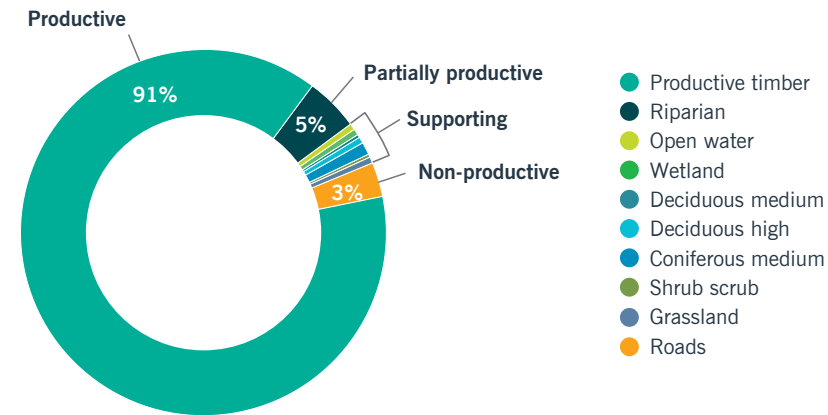
In 2022, these steps were taken for a pilot 58,698-acre timberland property in the United States:

- Using satellite imagery data for habitat mapping and creating a property asset register (an inventory of natural capital assets, including productive and supporting forest and native vegetation, lakes and rivers)
- Assessing materiality of ecosystem services and management risks, based on the natural capital assets
- Measuring and valuing ecosystem services, including production costs and returns, and values to wider society, associated with each natural capital asset
- Estimating costs committed to maintaining natural capital assets

The key natural capital accounting outputs for the timber pilot property are the asset register (right hand side) and the natural capital balance sheet (next page).

Natural capital asset register

Pilot area by type of habitat
58,698-acre timberland property



5.4M

τCO₂e
carbon stock in the
timber biomass across
productive area

5

KEY BIODIVERSITY
AREAS
on or within
10 km of site



Natural capital balance sheet

2022 reporting year		Value to business	Value to society	Total value
<i>Present value (US\$ millions) calculated over 25 years for the 58,698-acre timberland property</i>				
Asset values	Timber	82		82
	Carbon sequestration	24	584	608
	Air quality regulation		7	7
	Recreation	8	5	13
	Gross asset value	114	596	709
Material non-monetized asset values	Biodiversity	threatened species potentially found within 50 km of the site:		65 species count
	Water quality	forest managed as riparian buffer:		5%
	Soil quality			
	Flood risk management			
Carbon in timber removed from property	embedded in timber product:		see explanation	
Liabilities	Natural capital maintenance costs	-11		-11
	Production costs	-0.4		-0.4
	Natural capital production	-12		-12
	Total liabilities	-24		-24
Total net asset value		90	596	686

Explanations of the elements in the balance sheet

Asset values and **Liabilities** are the aggregated flows over the next 25 years, calculated as **Present values** using a discount rate of 5% for values to business, and 3% for values to society. The 25-year horizon means the asset value cannot be directly compared to the fair market value of the property, which would typically be assessed over a longer timescale.

Total value is the sum of value to the landowner (private) and society. Private benefits reflect potential income from the current output of the property. Wider society benefits are provided to the general population. This breakdown sheds light on those silent and invisible values that are not possible to quantify or express in monetary terms.

Asset values will differ across properties, reflecting what is provided by each. There can be rounding differences in the numbers in the table.

Total net asset value is asset values minus liabilities. It has not been confirmed that the level of liabilities is sufficient to sustain the benefits in the account.

Timber: an average yield of 276,000t/year from 2022-2046 (from Nuveen Natural Capital's own data) valued at an average retail price of US\$130/t.

Carbon in the balance sheet:

- Carbon sequestration** refers to the transfer of carbon between the atmosphere and non-atmospheric carbon pools. Here it is calculated as the difference between sequestration into the forest and mobile combustion emissions from equipment use (total 8.5M tCO₂e). Data is derived from Nuveen Natural Capital's own modelling for 57,000 acres of forest habitat (2022). Carbon gains (sequestration) are valued at U.S. Government social cost of carbon (US\$57/t in 2022 prices).
- Carbon credit sales** are planned to begin in 2023 and are based on forecast tons of emission reductions and credit prices as part of Nuveen Natural Capital's business forecasts. Carbon credits are created where forest management has been adjusted to ensure sequestration and long-term storage, and a contract for this has been sold. Of 8.50M tCO₂e of total sequestration, 1.44M tCO₂e will be sold as credits, and 7.06M tCO₂e is unsold.
- Note that while credits sold are likely to offset carbon emissions elsewhere (outside the boundary of the account), the accounts of the purchaser will show a zero balance (assuming credits equal their emissions) and, as a result, a zero monetary value.

- Carbon in timber removed from property:** carbon leaves the property embedded in the harvested timber (8.92M tCO₂e). This is recorded separately from sequestration because the carbon is not emitted into the atmosphere (where it contributes to climate change). The subsequent profile of storage in wood products or decay into atmospheric carbon will depend upon consumer use, which would be recorded in a life-cycle assessment (LCA); but is beyond the scope of this account (which is Scope 1 as defined in the BSI 8632:2021 standard). An appropriate \$ value per tCO₂e of embedded carbon in timber has not been identified, so it is recorded in 'material non-monetized asset values'.

Air quality value: health benefit from vegetation removing PM_{2.5} particulate pollutants from the air, based on i-Tree Canopy tool data derived from Nowak et al. (2014).⁵

Recreation: there are 267 deer hunting leases at the property, which have an estimated 39,000 visits per year with a total value to participants of US\$970,000/yr in 2022. Estimated value per trip is derived from the Recreation Use Values Database.⁶ The value includes income (private) from the sale of hunting leases and the (wider society) welfare value of recreation. The value to the business from the sale of hunting leases is subtracted from the wider society value to avoid double-counting.

Material non-monetized asset values report any material costs and benefits that could only be measured in units other than money at this stage. Biodiversity data is from IBAT.⁷ The management of riparian buffers contributes to maintaining soil quality, flood risk reduction and protecting water quality. For carbon removals embedded in harvest timber, see 'carbon' notes.

Production costs: costs for the production of timber, sourced from Nuveen Natural Capital's accounts.

Natural capital maintenance: costs of monitoring and managing forest habitat (e.g., riparian forest buffers), from Nuveen Natural Capital's own data.

Disclaimer: While eftec and Nuveen Natural Capital have endeavored to provide accurate and reliable information, they are reliant on the accuracy of underlying data provided and those readily available in the public domain. Neither eftec nor Nuveen Natural Capital will be responsible for any loss or damage caused by relying on the content contained in this report.



Key takeaways from timberland pilot

Natural capital balance sheets quantify the role of nature in a property. They measure a wider range of benefits than are identified through market data alone, and highlight the relationship between these benefits and the costs of maintaining natural capital assets.

“ Our natural capital accounting work with Nuveen Natural Capital has continued to innovate by using satellite data to build sound United States forest pilot accounts. The results align to the British Standard (BSI 8632), and will enable consistent reporting against the Taskforce on Nature-related Financial Disclosure (TNFD) framework over time.”

Ian Dickie
Director, etfec



Over the forecast 25-year period, the carbon stock in the forest will decrease. This movement is the sum of sequestration from the atmosphere (inflow of carbon, total: 8.50M tCO₂e) and carbon removed from the property in harvested timber over time (total: 8.92M tCO₂e). The movement in carbon stock will arise due to current timber stock being above optimal harvesting age. Nuveen Natural Capital’s site management plans will align timber harvests to target age. This will result in a reduction in average age of timber stands, and so a net loss of stored carbon over time. It should be noted that this loss (of approx. 420,000 tCO₂e) is small (7.8%) relative to the total carbon stock stored in the forest (approx. 5.4M tCO₂e).



Other than carbon sequestration, approximately 90% of the value emanating from the ecosystem services is private value.



The calculated values assume benefits are maintained into the future, which may not be the case because it is difficult to ensure that current maintenance costs will be adequate to deal with future risks (e.g., from climate change).



The resources committed to maintaining the asset are around 3% of the valued benefits. Some material benefits are not valued in monetary terms (e.g., biodiversity).



Compared to the Brazilian farmland property pilot reported in 2022:

- Commercial production and carbon benefits remain important.
- Other key benefits differ: for example, recreation is important at this timberland property, whereas lake protection was valuable in Brazil.
- Benefits per acre and maintenance costs per acre are both lower for the timberland property, reflecting the more expansive nature of timber production compared to agriculture.



Estimating the value of natural capital will help us to better maintain, restore and increase it.



Climate



Our approach

We believe that agriculture and timber management practices can play important roles in addressing climate change by reducing emissions and enhancing removals.

Across both farmland and timberland we seek to improve our tracking of metrics relating to greenhouse gas (GHG) emissions and removals, and look for opportunities to improve our GHG footprint through management, conservation, or restoration activities.



In this report

In 2022, we upgraded our GHG methodology for farmland based on best practice guidelines. We also developed a GHG methodology for timberland and piloted the GHG Protocol's draft Land Sector and Removals Guidance on one timber property.

In addition to this work, for the first time we are able to report estimates for carbon removals for vineyards and horticulture properties ([see page 20](#)).



Looking forward

- Further refine our GHG methodology based on the GHG Protocol's Land Sector and Removals Guidance once it is finalized
- Identify opportunities for continuous improvement in calculating removals specifically for supporting lands in both farmland and timberland assets
- Use international guidance to define climate targets



Greenhouse gas accounting: improving the baseline

Corporate emissions

Corporate emissions for Nuveen Natural Capital in 2022 were 725 tCO₂e.

- Our direct, scope 1, emissions were 447 tCO₂e (62%), stemming primarily from heating and cooling our dedicated offices and from fuel used in company cars.
- Indirect, scope 2, emissions from purchased electricity resulted in 55 tCO₂e (7%).
- Scope 3 emissions, from air travel, resulted in 223 tCO₂e (31%).

Portfolio emissions

We also account for greenhouse gas emissions from our assets under management. For these assets, we focus our accounting on emissions arising from activities that occur within the assets' physical boundaries.

Regarding farmland assets for which we have operational control, we report on-farm emissions as scope 1 and 2. Where tenants operate the assets, emissions are reported as scope 3.

For timberland assets, we account for and report some additional material scope 3 emissions.

Corporate and portfolio emissions methodology is informed by the GHG Protocol and the IPCC Guidelines for National Greenhouse Gas Inventories and has been reviewed in collaboration with an NGO.





Farmland GHG Account

Emissions

In accounting for emissions we focus on activities that take place within the boundaries of farms. We report emissions from directly operated assets as scope 1 and 2 emissions, and those from tenant-operated assets as scope 3 emissions.

Emissions calculations are based on a combination of site-specific, primary data, where available, and informed estimates. Calculations make use of the Cool Farm Tool and the GHG Protocol's GHG Emissions Calculation Tool to take advantage of best practice.

In 2022, we improved our calculation methodology by including energy use for irrigation, capturing more accurate information on fertilizer types being used, and aligning reporting with the GHG Protocol.

Removals

Sequestration in vineyard and horticultural crops was modelled for each crop type using standardized tree yield curves that were drawn from published scientific literature. The yield curves were applied on the basis of the area planted and year of planting, which facilitated a sequestration estimate in the reporting year.

The modeling was confined to above- and below-ground biomass carbon pools (live trees and roots), excluding fruits, nuts, shells, husks and annual canes. The debris (dead biomass) and soil organic carbon pools were excluded, ensuring conservative estimates.

Looking forward, we plan to refine tree yield curves based on field measurements and incorporate more accurate data cuts from certain properties. We also plan to refine the carbon stock calculations for supporting lands on a global basis.

Scope	Sources	CO ₂ e* (tonnes)	CO ₂ (tonnes)	CH ₄ (tonnes)	N ₂ O (tonnes)
Scope 1	Mobile & stationary combustion	17,055	17,055	0	0
	Fertilizer use	8,945	976	0	29
	Total GHG emissions	26,000	18,031	0	29
Scope 2	Purchased electricity	12,738	12,738	0	0
	Total GHG emissions	12,738	12,738	0	0
Scope 3	Mobile & stationary combustion	147,538	147,538	0	0
	Fertilizer use	380,907	91,835	0	1,048
	Purchased electricity	19,458	19,458	0	0
	Total GHG emissions	547,903	258,831	0	1,048

*To compute CO₂e, each of the different greenhouse gases is multiplied by its global warming potential.

7.4M+

KWH SOLAR ELECTRICITY generated on our California horticulture properties

608K+

ESTIMATED τCO₂e carbon stock in selected vineyards and horticulture properties

65K+

ESTIMATED τCO₂e average annual sequestration in vineyards and horticulture properties

33.8M+

ESTIMATED τCO₂e carbon stock in legal reserves and areas of permanent preservation, in line with the Brazilian Forest Code, within farmland properties in Brazil



Timberland GHG Account

Emissions

In 2022, we completed our first greenhouse gas emissions calculation for the entire United States timberland portfolio. Our accounting focus was on scope 1 and 2 emissions, but certain material scope 3 emissions were included in the calculation.

The calculation was based primarily on site-specific, primary data, with some informed estimates. We also employed the GHG Protocol's GHG Emissions Calculation Tool.

For this year, we have looked at a wide scope of activities rather than adopting a minimum materiality threshold. In future years we may focus on the highest-emitting activities for each scope.

Removals

Each year, we use commercial inventory data to quantify standing carbon stock on productive forests globally. The inventory methodology generally uses annual sampling to collect measured tree data across a subset of productive areas.

Merchantable timber inventory is extrapolated from the measurement data and projected forward annually to maintain an estimate of current inventory across all productive areas. From the merchantable inventory, carbon stock is estimated using species-specific conversion and biomass expansion factors. First timber volumes are converted to dry weight, then to whole-tree biomass to account for non-merchantable components of the trees (roots, branches, leaves), and finally to metric tons of CO₂e.



Scope	Sources	CO ₂ e* (tonnes)	CO ₂ (tonnes)	CH ₄ (tonnes)	N ₂ O (tonnes)
Scope 1	Mobile combustion	6,906	6,867	<1	<1
	Refrigeration of seedlings	<1	<1	0	0
	Total GHG emissions	6,906	6,867	<1	<1
Scope 2	Purchased electricity	1.6	1.6	0	0
	Total GHG emissions	1.6	1.6	0	0
Scope 3	Mobile combustion from third-party harvesting and transport	3,570	3,547	<1	<1
	Total GHG emissions	3,570	3,547	<1	<1
Scope 1	Biogenic (as a result of burning of woody debris or wildfires)		27		

Note: No fertilization took place across U.S. timberland assets in 2022.

*To compute CO₂e, each of the different greenhouse gases is multiplied by its global warming potential.

42M+

TCO₂E
carbon stock in global
timberland portfolio

4M+

TCO₂E
average annual
sequestration



Continuously improving our GHG methodology

Farmland and timberland represent core activities relating to carbon emissions and sequestration across the global landscape. Accordingly, Nuveen Natural Capital has been continuously evolving both the breadth and depth of our GHG methodology:

- **Breadth:** extending our understanding of our carbon footprint to consider both emissions (updated in 2022) and removals (work is in progress) across productive areas and supporting areas
- **Depth:** gathering increasingly granular data at the asset level to help determine where we can improve our GHG footprint

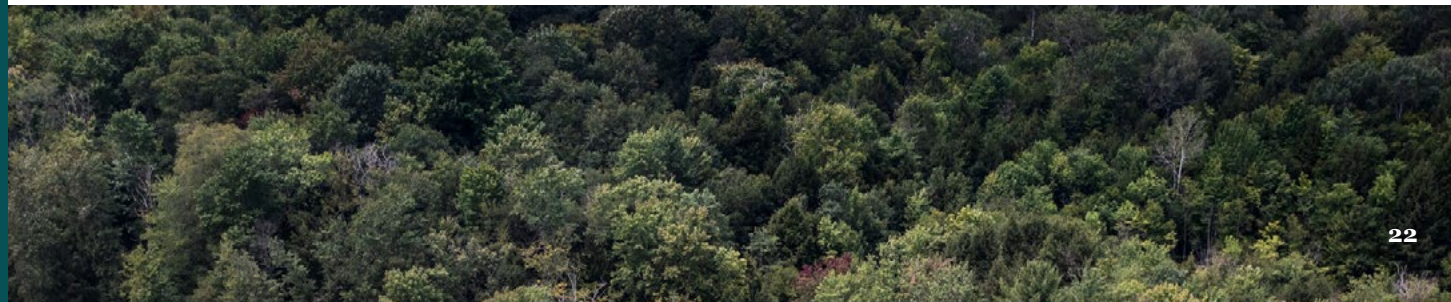
We plan to continue to improve that breadth and depth of GHG accounting and reporting by taking advantage of evolving methodologies. This increasing accuracy will enable us to set emission reduction and removal enhancements targets.

2022 reporting year	Emissions	Stock	Sequestration
Farmland productive	0.59M tCO ₂ e	0.6M+ tCO ₂ e*	0.06M+ tCO ₂ e*
Farmland supporting	Not applicable	33.8M+ tCO ₂ e†	To be calculated
Timberland productive	0.01M tCO ₂ e	42M+ tCO ₂ e	4M+ tCO ₂ e‡
Timberland supporting	Not applicable	To be calculated	To be calculated

* Estimated only for vineyards and horticulture properties

† Above-ground biomass on Brazilian farmland holdings only, using IPCC guidelines from 2006

‡ This indicator shows the average annual sequestration that has occurred throughout the lifecycle of the asset





How we deliver verified carbon credits

Forest owners have the potential to realize carbon value by developing carbon credit projects. Owners can generate carbon credits by managing land in ways that reduce GHG emissions or increase removals of CO₂ from the atmosphere.

In pursuing this work, owners engage in three main forest management activities or types of carbon projects:

- **Forest restoration:** These projects create or restore forest cover, which increases the removal of CO₂ from the atmosphere, as well as storing carbon in, above and below-ground biomass
- **Improved forest management:** This means altering how forests are managed to increase carbon storage or to reduce or avoid emissions by constraining harvesting, and
- **Avoided deforestation:** REDD+ projects reduce emissions by stopping deforestation and forest degradation, both of which contribute significantly to global emissions.

Quantification of resulting climate benefits is achieved by employing broadly accepted crediting standards and mechanisms for monitoring, reporting and independent verification. Typically, after a forest carbon project commences it will be roughly 18-24 months before the project becomes operational. The timing of carbon credit issuance and sales revenue varies by project type with improved forest management and REDD+ projects reaching this stage earlier than forest restoration projects. Throughout the lifetime of the project, carbon levels will be confirmed through periodic independent inventory assessments.



As of 2022, Nuveen Natural Capital has carbon projects in development in the United States and South America for both compliance and voluntary market frameworks. All together these projects are expected to deliver an estimated 3.5M tCO₂e of climate benefits.

For more information on carbon markets for land-based investments, please see [An introduction to carbon markets for land-based investments \(nuveen.com\)](https://www.nuveen.com)



People





Our approach

Nuveen Natural Capital's commitment to people is multifaceted. At a high level, everything we do is intended to provide what people need to live and thrive — namely food, timber, and fiber — both today and in the decades ahead. At the same time, on the ground, we are committed to engaging and supporting local communities through our business relationships and the beneficial initiatives and philanthropy that flow from our corporate social responsibility (CSR) programs.



In this report

This year we share details of our updated Global Sustainability Policy and Social assessment for emerging markets, both of which reflect our commitment to addressing a range of ESG considerations.

We also present several statistics that illuminate the impact of our CSR programs in 2022 ([see page 27](#)).

For the first time, we have endeavored to estimate protein, calorie, fiber and timber provisions from our overall portfolio ([see page 28](#)).



Looking forward

- Continue to strive for operational excellence by analyzing tenant and operator contracts for consistency
- Update the metrics we use to assess the impact of our CSR programs
- Identify strategies and tools to deepen engagement with tenants, crop managers and property operators



Operational excellence

Nuveen Natural Capital strives to operate its business in accordance with the high standards declared in our **Global Sustainability Policy**. This policy is consistent with the five UN Principles for Responsible Investment in Farmland, addressing:

1. Environmental sustainability
2. Labor and human rights
3. Land and resource rights
4. Business and ethical standards
5. Transparent reporting

As we implement this policy, Nuveen Natural Capital will be reviewing its lease and contractor agreements to check alignment with the United Nations Guiding Principles and OECD Guidelines as the minimum safeguards to help protect environmental and fundamental human rights.

Social assessment for specific geographies

Nuveen Natural Capital conducts a pre-acquisition review for prospective investments in Brazil and Romania. This additional review, focused on social assessment, helps us identify risks, opportunities and potential steps to engage proactively with local communities surrounding the property.

The social assessment explores such factors as:



Historical narratives related to the site and the local community



Land title and ownership history for the site



Government policy and planning efforts that may affect the site or local economy



Socioeconomic development near the site



Economic development issues and opportunities related to labor, production, logistics, technical assistance, and credit





Engagement with local communities

Nuveen Natural Capital is committed to fostering positive community engagement in regions where we invest and operate. We act on this commitment through various activities appropriate to the local context. These activities, among other things, involve sponsorship of local projects using our Corporate Social Responsibility (CSR) budget and providing recreational access to our timberland properties.

Our investor-supported CSR programs allow our teams to contribute to surrounding communities, with a focus on education, environment and social engagement. This involvement manifests in diverse initiatives, some of which are highlighted in this report's Portfolio in Focus section.

14

YEARS

involvement in the Fruits of Employment initiative

Gives individuals with disabilities access to competitive employment across select properties. As part of this ongoing initiative, five students in California took part in a paid internship program in early 2023 in which they gained real-life work experience on Monterey County vineyards, guided by a Nuveen Natural Capital crop manager.



CSR impact in 2022:

350K 14

US\$ INVESTED
in CSR projects

CSR
projects
supported

50%

NATURE-ALIGNED



29%

CLIMATE-ALIGNED



79%

PEOPLE-ALIGNED



Note: Some projects support more than one priority

Timberlands provide local benefits beyond timber production. As part of our stewardship we identify and support the maintenance of sites having historical and cultural value. We are cognizant that spiritual, medicinal and ceremonial activities are rooted in the land and have significance for diverse local communities.

Our forests also are home to a variety of biodiversity species and provide great opportunities for hiking, wildlife viewing experiences, and fishing and hunting (the latter activities regulated by local governments to sustainably manage wildlife populations).

9K+

RECREATIONALISTS
from 46 U.S. states and 2 Canadian provinces were granted free access to our North American timberland properties





Providing sustenance

The world must dramatically increase timber and calorie production in the coming decades to keep pace with population growth.

Meeting these demand-growth challenges while preserving natural ecosystems requires that broader value chains innovate to “do more with less”.

This year, Nuveen Natural Capital endeavored to estimate protein, calorie, fiber and timber provisions from our overall portfolio. Here are details of our process:

- Our calculations were based on harvested, not processed, amounts from our farmland and timberland production
- We combined different crop types for a total calorie and protein count
- Our calculations used USDA nutritional data⁸ to estimate calories and protein per 100-gram servings
- Our estimates were based on assumptions of daily requirements of 2000 kcal⁹ and 50 grams of protein.¹⁰ In addition, we estimated 113 grams of cotton per a newborn’s article of clothing (half of a t-shirt)¹¹ and about 340 cubic meters of timber for framing a 140 square meter house¹²

Generated across our portfolio in 2022:

49^{T+}
CALORIES

Approximately equivalent to the necessary annual caloric intake of 67 million people, or the population of France

360^{B+}
GRAMS OF PROTEIN

Approximately equivalent to the necessary annual protein intake of 19 million people, or the population of The Netherlands

158^{M+}
KILOGRAMS OF COTTON

Roughly the amount needed to clothe 1.4 billion newborn babies

299^{K+}
CUBIC METERS

Enough to build the frames for roughly 10.5K family homes (about 140 sq m in size)



Partnerships



Partnerships

Partnerships to foster continuous improvement

Partnerships serve as critical enabling factors for the continuous improvement of Nuveen Natural Capital's sustainability strategy. By engaging with knowledgeable external partners, we help ensure that our initiatives are designed in as responsible a way as possible.

Recently we forged global sustainability collaborations with: The Nature Conservancy, a global non-profit environmental organization; and the High Ambition Group (HAG), a leadership initiative convened by the United Nations Environment Programme (UNEP).

High Ambition Group (HAG) of the Global Food Finance Network

In 2022, Nuveen Natural Capital joined the High Ambition Group, which UNEP convenes within The Good Food Finance Network (GFFN), a multi-stakeholder collaboration platform for advancing sustainable food system finance. Members of HAG include public and private financial institutions, such as global environmental funds, banks, asset managers, and agri-businesses.

HAG encouraged its members to publish key sustainability targets for 2023 to demonstrate resolve in “raising the bar” across the wider finance and value chain. These targets were socialized at a UNEP-hosted COP27 workshop and published on the GFFN website in October 2022.

Nuveen Natural Capital elected to publish two targets:

1. Expand and upgrade our 2018 zero deforestation commitment and incorporate it into our Global Sustainability Policy
2. Create a natural capital asset register across our full portfolio — which is progressing well, with partial results shared in this report ([see page 12](#)) and remaining results expected by year end

“Working towards a sustainable food and agriculture sector requires us to accelerate the pace of change. Identifying ambitious and credible targets is critical to making this happen. We are delighted that Nuveen Natural Capital joined the High Ambition Group of the Good Food Finance Network, and we look forward to supporting the development of their next iteration of nature and climate targets.”

Jessica Smith

Head of Nature at UNEP FI and representative to the Global Food Finance Network

Partnerships

The Nature Conservancy

Nuveen Natural Capital is delighted to be collaborating with The Nature Conservancy with respect to sustainability enhancements across our existing portfolio. The Nature Conservancy is supporting Nuveen Natural Capital's efforts to measure the environmental and social performance of its assets and to transition its existing farmland and timberland operations to enhanced nature-positive practices.

The Nature Conservancy's support involves reviewing and enhancing our data collection and metrics to align with a nature-positive approach. This includes looking at our policies and greenhouse gas accounting, as well as providing suggestions for implementing on-the-ground improvements to our existing portfolio.

The Nature Conservancy and Nuveen Natural Capital have also been collaborating to update what nature-positive means both for our company and for the industry as a whole. We see four main principles emerging, related to improving Nature, Climate, People outcomes.

They are:



Regenerative land management



Nature-positive landscapes



Enriching communities



Credible and transparent reporting

We recognize that there is no one-size-fits-all strategy for improving nature-positive outcomes across the wide range of soil conditions, crop types and local contexts around the globe. So each of the four principles above ties to a suite of proposed practices and metrics for tracking adoption and reporting impacts.

Over the course of the collaboration, Nuveen Natural Capital and The Nature Conservancy will investigate and build practical tools and techniques to encourage on-property nature-positive improvements in specific locations of our portfolio, while factoring in local contexts, supply chains and enabling conditions.

“The private sector will be instrumental in solving biodiversity loss and contributing to a nature-positive future. The Nature Conservancy sees efforts like Nuveen Natural Capital's adoption of a nature-positive approach for their portfolio as a signal that real asset managers are willing to measure their impacts on nature and work to enhance it. The next step will be to support land managers with the tools and incentives to accelerate adoption of nature-positive practices, recognizing the varying local contexts.”

Michael Wironen

Director of Corporate Engagement for Food & Water,
The Nature Conservancy



Portfolio in focus



Key Performance Indicators

Aligning responsible practice KPIs with a nature-positive approach

Nuveen Natural Capital is developing an approach to creating, measuring and reporting on key performance indicators (KPIs) for sustainable practices. This nature-positive approach, which we are creating with The Nature Conservancy, is intended to be practical, flexible and effective. It will help us support our tenants, crop managers and property operators as they evolve their sustainable practices, and empower our business units to adapt initiatives and projects to match the operational contexts in which they work.

The approach will guide how we collect data and, eventually, how we evolve practices to bolster a nature-positive ethic. Currently, the nature-positive approach focuses mainly on farmland operations, but timberland has been adapting the approach to meet their operational realities.

For 2022, all collected sustainability data was aligned with the four nature-positive principles (see graphic). All data was self-declared by tenants, crop managers and property operators, with no external audit. In the spirit of continuous improvement, we intend to articulate more ambitious KPIs and clarify links between desired nature-positive outcomes and the indicators we are collecting.



Nature-positive outcomes

- Mitigate climate impacts
- Adapt to climate change
- Promote & restore biodiversity
- Regenerate land & soil
- Protect water resources
- Support resilient communities



Regenerative land management

- Protect & restore soil health (integrated soil fertility management, minimal tillage, diverse crop rotations, continuous cover)
- Adaptive management of natural resources (precision water management, energy efficiency, etc.)
- Apply integrated pest management (IPM) strategies
- Protect & support biodiversity in working lands
- Promote innovation



Nature-positive landscapes

- Conserve & restore natural ecosystems collectively (e.g., wetlands, riparian areas, protected areas)
- Strategically manage Edge of Field/non-tillable land
- Connect functional habitats



Enriching communities

- Generate & share knowledge through connected communities
- Provide or facilitate delivery of resources to land managers
- Support enabling conditions for resilient communities (e.g., policy, markets, profitability, stability)
- Safeguard the well-being of both people & animals

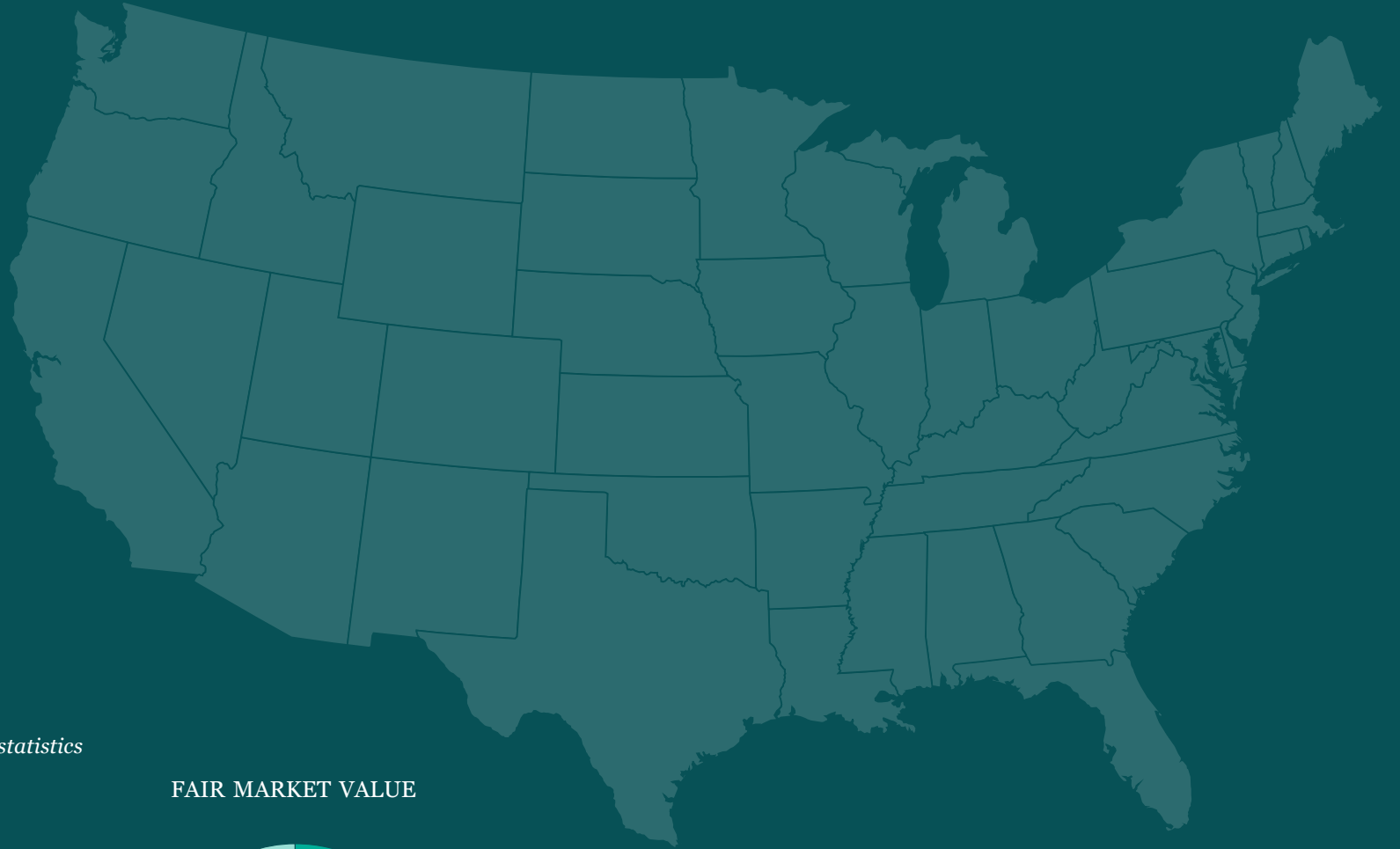


Credible and transparent reporting

United States

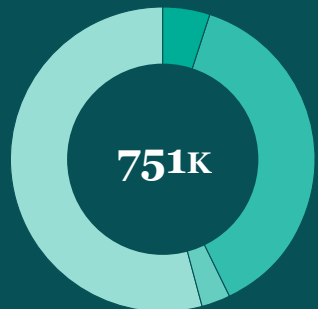
With properties in 17 U.S. states, Nuveen Natural Capital supports the cultivation and harvesting of a wide range of agricultural and timber products.

- UNITED STATES OFFICE LOCATIONS

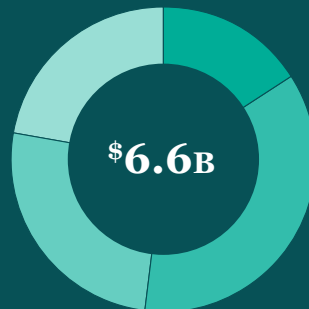


Click crop names to view statistics

TOTAL ACRES

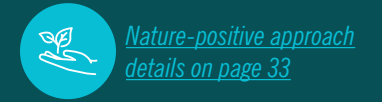


FAIR MARKET VALUE



ENVIRONMENTAL RESTORATION
46K+ ACRES AND US\$ 140M UNDER ADVICE

U.S. Timberland



NATURE-POSITIVE PRINCIPLES	PRACTICES	INDICATORS	RESULT
 Regenerative land management	Land & soil health	Properties with climate suitability assessment of tree species	83%*
		Properties avoiding excessive soil disturbance†	100%
		Properties with mechanisms to increase carbon removals and storage in soils‡	17%
		Properties with integrated fire management strategy	100%
	Resource optimization	Properties with water protection initiatives during all management phases	100%
		Properties with efficient utilization of forest resources residues§	67%*
 Nature-positive landscapes	Supporting biodiversity	Portfolio area covered by protected native vegetation	7%
		Properties with a program to conserve biological diversity	67%*
		Total area of conserved riparian buffers	34K acres
 Enriching communities	Safeguard well-being	Properties with health and safety training	100%
	Indigenous peoples and local communities	Properties with indigenous people engagement policies	100%
		Properties with stakeholder engagement policies	100%
		Properties with programs to protect important social or cultural value areas	100%
		Properties providing recreation access to local communities	83%*
 Credible and transparent reporting	Certification	Acres certified by third-party standard	100%

* Not accomplished for properties acquired in last quarter of 2022. Slated for 2023.

† Practices include reduced soil compaction techniques from the selection of equipment to the restriction of the movement of heavy machinery

‡ Mechanisms such as carbon projects or conservation easements (extended rotation ages)

§ Such as woody debris naturally decomposing or sent to be converted into electricity

|| Sustainable Forestry Initiative® (SFI®)

U.S. Timberland



Prioritizing third-party certifications to affirm our forest management programs

In addition to abiding by local environmental laws and regulations, Nuveen Natural Capital strives to gain third-party certification for our timberland assets, both to affirm our forest management practices and to demonstrate our sustainability commitment to the marketplace. We seek such certification under globally recognized timberland management standards, including the Sustainable Forestry Initiative® (SFI®).

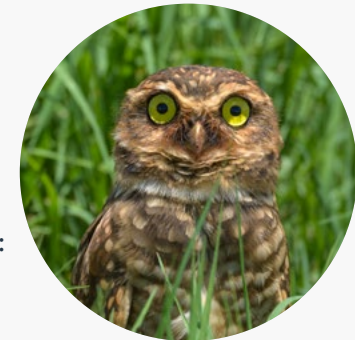
For more than 25 years, SFI® has been certifying the sustainability of forest management practices and forest product supply chains across North America. Today, its standards are applied to over 350 million acres of forests.

The SFI® Standards aim to be rigorous and transparent, and they are revised regularly to keep pace with change. For example, their most recent program revisions added objectives related to wildfires and climate change. As of 2022, SFI's® Standards have been guided by 13 Principles that span from sustainable forestry and forest health to water resource protection, to research and training, and many others.

We are pleased that in 2022, Nuveen Natural Capital earned special recognition from SFI® for going above and beyond the Standards in two areas:

- **Protection of Biological Diversity** – To manage forests in ways that protect and promote biological diversity, including animal and plant species, wildlife habitats, and ecological or natural community types
- **Community Involvement and Social Responsibility, and Respect for Indigenous Rights** – To broaden the practice of sustainable forestry through community involvement

We intend to continue our efforts to engage with organizations such as SFI® to help shape our sustainability programs using emerging forestry best practices.



U.S. Timberland



Cultivating the next generation of forestry talent

Held annually in Idaho since 2001, the three-day Foresters Forum brings forestry and natural resources industry professionals together to learn and grow. Attendees gain insights into new technologies and equipment, sustainability methods and community engagement, and many other topics, while meeting and networking with industry peers.

Nuveen Natural Capital was proud to sponsor the attendance of six female University of Idaho students to help support them at the start of their career journeys in the industry.

The sponsored students found the experience highly rewarding. In an acknowledgement letter, one student wrote, “Thanks to Nuveen Natural Capital, I had the opportunity to network, grow, and expand my knowledge,” while another student commented, “The scholarship Nuveen Natural Capital provided to us has truly opened doors and showed us a sneak peek of what the professional forestry world consists of.”

New Partnership to Protect Species

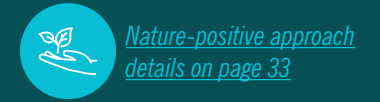
In March 2023, the Wildlife Conservation Initiative (WCI) — a new partnership of three prestigious organizations — was formalized with a Memorandum of Understanding that codifies the conservation value and impact of active forest management in private working forests. The three partners in WCI include: the U.S. Fish and Wildlife Service; National Council for Air and Stream Improvement Inc.; and the National Alliance of Forest Owners, of which Nuveen Natural Capital is a member. We are proud to support this important initiative and its goal of conserving common, at-risk, and listed species through active forest management.




—
9+

STATES

benefiting from access to environmental restoration funding due in part to our investments in U.S. mitigation banking services.

U.S. Horticulture



NATURE-POSITIVE PRINCIPLES	PRACTICES	INDICATORS	RESULT
 Regenerative land management	Soil health	Properties with reduced or conservation tillage	100%
		Properties with cover crops	81%
		Properties applying naturally derived soil amendments	60%
	Resource optimization	Properties adopting nutrient management plans following 4Rs principles*	100%
		Properties with water efficiency improvements	100%
	Integrated pest management	Properties practicing biological pest control	100%
		Properties with written crop protection program that adheres to Integrated Pest Management principles	100%
		Properties with rotating pesticide modes of action	100%
Promoting innovation	Adoption of, or renovation with, improved varieties†	100%	
	Properties with innovative biological, mechanical, or chemical methods implemented or being trialed	100%	
 Enriching communities	Knowledge sharing	Crop managers receiving sustainability training and education	100%
 Credible and transparent reporting	Certification	Acres certified or covered by third-party standard‡	96%

* 4Rs: right nutrients, at the right time, in the right place, and in the right quantity

† Varieties with enhanced water use efficiency, carbon sequestration, nutrient use efficiency, pest or disease resistance, etc.

‡ Including California Almond Sustainability Program, GLOBALG.A.P., Bee Friendly Farming (BFF), PrimusGFS, USDA Good Agricultural Practices (GAP), and USDA Organic

U.S. Horticulture

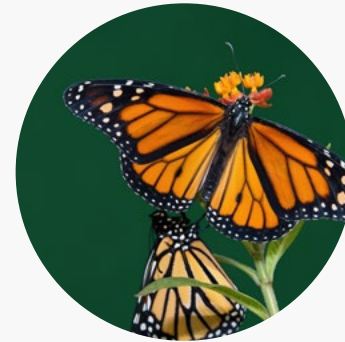


Restoring habitat for threatened monarch butterflies

CALIFORNIA

Threats to the monarch butterfly population are multi-pronged and include loss of breeding habitat, loss of overwintering habitat, changes in weather patterns, and other factors. California's Central Valley has been identified as both an early spring and summer breeding zone for these butterflies.

To add natural capital to our ranches, the horticulture team in California is partnering with Monarch Joint Venture, a broad-based collaborative, and Great Valley Seeds, which specializes in native seeds, to restore non-tillable areas to native flowering vegetation. This vegetation includes specific milkweed varieties that support the monarch's lifecycle.



Positive impact

About two acres of non-tillable land was restored to native flowering vegetation in 2022.



Looking forward

Our team is considering additional projects of this kind in 2023.

—
88%

CALIFORNIA HORTICULTURE portfolio certified in 2022 by the Pollinator Partnership's Bee Friendly Farming (BFF) program, with the remainder slated for certification in 2023.

“Treehouse California Almonds is proud to have Nuveen Natural Capital as a partner. They strive to meet supply chain demands while acting on their commitment to Bee Friendly Farming and soil health regeneration, as well as participating in the California Almond Sustainability Program (CASP), across all managed properties. Such commitment is essential to develop innovative products to meet customers' requirements for sustainably sourced food products.”

Joe Gardiner

Vice President of Business Development,
Treehouse California Almonds, LLC.

U.S. Horticulture



Harnessing groundwater recharge

CALIFORNIA

California's hydrology is punctuated by floods and droughts. Cities, agriculture, and the environment alike, rely on underground aquifers which make up the State's largest water storage system. While the careful use of water has always been a priority at Nuveen Natural Capital, efforts have been amplified in recent years to increase groundwater recharge activities as a tool to support sustainability and mitigate risk. Sustainable water management requires balancing the water use equation.

During the winter, groundwater recharge occurs when excess precipitation creates flood water that, when diverted to either dedicated recharge basins or applied to fields during tree dormancy, percolates through the soil strata, recharging the underlying aquifer.

We plan to develop more groundwater recharge as part of our broader water conservation and risk mitigation efforts. This supports crop yields and quality while optimizing use of water and other precious resources.



—
4.2K+

ACRE-FEET

already recharged; on track to recharge a total of 10,750 acre-feet for the 2022-2023 water year.

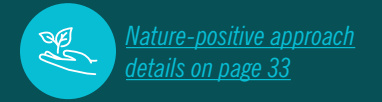
—
48%




ACREAGE

will utilize solar energy by end of 2023 from 17 solar PV projects (8 projects already completed, plus 9 being completed this year). We plan to build 9 additional projects in the future; once a total of 26 solar PV installations are operating, we anticipate approximately 59% of acreage to utilize solar, which would avoid 16,843 tons of CO2 emissions annually. At these properties with PV installations, approximately 79% of energy usage will be offset by solar generation.



U.S. Viticulture



NATURE-POSITIVE PRINCIPLES	PRACTICES	INDICATORS	RESULT
 Regenerative land management	Soil health	Properties with reduced or conservation tillage	100%
		Properties with cover crops	100%
		Properties applying compost or organic amendments	82%
	Resource optimization	Properties adopting nutrient management plans following 4Rs principles*	100%
		Properties with water efficiency improvements (e.g., installing underground soil moisture sensors)	100%
	Integrated pest management	Properties practicing biological pest control (e.g., pheromone dispensers)	84%
		Properties with written crop protection program that adheres to Integrated Pest Management principles	100%
		Properties with rotating pesticide modes of action	100%
	Promoting innovation	Adoption of, or renovation with, improved varieties†	100%
		Properties with innovative biological, mechanical, or chemical methods implemented or being trialed	100%
 Enriching communities	Knowledge sharing	Crop managers receiving sustainability training and education (e.g., annual sustainability summit)	100%
 Credible and transparent reporting	Certification	Acres certified or covered by third-party standard‡	100%

* 4Rs: right nutrients, at the right time, in the right place, and in the right quantity

† Varieties with enhanced water use efficiency, carbon sequestration, nutrient use efficiency, pest or disease resistance, etc.

‡ Including Leading Harvest, LODI RULES, LIVE Certified, California Sustainable Winegrowing Alliance (CSWA), Sustainability in Practice (SIP), Fish Friendly Farming and Salmon-Safe

U.S. Viticulture



Oak woodlands restoration aims to support native biology and sequester carbon

CALIFORNIA

A project is under way to restore about two acres of native oakwood land at Sunbelt Vineyard near Paso Robles, California. The restoration site originally was planted to vineyard when the property was acquired, but marginal soils and cross-sloping topography created barriers to productivity.

A Nuveen Natural Capital viticulture team member will collaborate with a local governmental organization and the crop manager that operates Sunbelt to design and implement the restoration plan. Ultimately, the recovered woodland will support diverse native biology while also serving to sequester carbon.

The project also will include maintenance activities designed to enhance existing oak woodland areas and reduce wildfire risk in the region. Fallen wood debris will be collected, mulched on-site and spread on vineyard roads to prevent erosion and reduce air pollution from dust.

—
225

ACRES

used for California vineyard redevelopment pilot to test a process involving fallowing, planting cover crops to build organic matter, and then leasing the land to a local shepherd for seasonal grazing. This regenerative approach fortified the soil and spawned a new revenue stream.

“Nuveen Natural Capital’s serious commitment to sustainable farming easily dovetails with McBride Sisters Wine Company’s key environmental and social initiatives. With the high-quality grapes that their talented viticultural team grows and nurtures, they have become a top supplier for our core wine programs and a first resort for our winemaking team as we develop new products. We believe that quality and sustainability go hand in hand, and we recognize that today’s keen wine consumer not only prefers but demands the kind of stewardship goals that McBride Sisters Wine Company shares with Nuveen Natural Capital. We look forward to continuing to cultivate our relationship with them as our company grows and evolves.”

Robin McBride

Co-Founder, McBride Sisters Wine Company

U.S. Viticulture



Success of pilot with UV-equipped robots prompts broader mildew-control project

CALIFORNIA

At Oasis Vineyard last year, Thorvald semi-autonomous robots (manufactured by Saga Robotics) successfully controlled powdery mildew within a five-acre trial area. The electrically powered robots use UV-C light, an ultraviolet sub-band, to destroy fungal pathogens during periods of susceptibility at night. A major economic pest of winegrapes, powdery mildew generally requires multiple fungicide sprays for control; the Thorvald effectively eliminated this requirement.

Based on this success, use of the Thorvald will be expanded this year to include 60 acres in the Playa Alta vineyard. This vineyard is within the Santa Lucia Highlands wine appellation of origin in California's Monterey County. The area's climate is highly favorable for ultra-premium winegrapes, but is also ideal for the development of the plant pathogen powdery mildew.

Playa Alta will be Saga's largest winegrape-focused project to date, and this increase in scale will help to hone this promising technology. Although treatment expenses using the Thorvald will mirror those of a standard regimen of fungicide sprays, labor requirements will be reduced by one-third.

There are additional advantages to using UV-C light to control powdery mildew, such as reducing resistance build-up among fungicides, decreasing per-acre fossil fuel consumption, and reducing soil compaction, due to the Thorvald's delicate footprint.




Bolstering organic herbicides

A synergistic compound used to reduce crop stress may improve the efficacy of organic herbicides. Previously, it has been challenging to attain adequate weed control using organic herbicides due to lack of potency. The synergist, glycine betaine, appears to improve absorption and translocation of herbicidal compounds when included in spray solutions. During the 2023 growing season multiple trials will be conducted in California vineyards to compare and assess the efficacy of organic and conventional herbicides supplemented with glycine betaine.

600

ACRES
fortified with biologically diverse, nutrient-rich vermicompost in soil health pilot at California vineyard.

NATURE-POSITIVE PRINCIPLES	PRACTICES	INDICATORS	RESULT
 <p>Regenerative land management</p>	Soil health	Properties with reduced or conservation tillage	58%
		Tillable acres with cover crops or relay cropping	18%
	Resource optimization	Tillable area in Delta implementing water efficiency improvements (e.g., electric well pumps)	87%
		Tillable area in Delta that is precision leveled	65%
		Tillable area in Delta that is irrigated by center pivot or land formed furrow*	22%

* Land formed furrow means that land is naturally contoured or minimally improved to facilitate irrigation

U.S. Row



Investing in more efficient irrigation systems in the Pacific Northwest

Managing a sizable portfolio in the U.S. Pacific Northwest, mainly in Idaho, requires addressing challenges such as a lack of precipitation, intense heat, and limited availability of water. Irrigation plays a key role in production and a tenant's operating budget, both of which benefit from continued investment in water efficiency and conservation.

This is why in 2022 we replaced more than 50 center-pivot irrigation systems in the region with more efficient sprinkler packages, which affected about 10% of total irrigation systems.



Sustaining the transition to electric well pumps

In all regions where irrigation is relevant, we have continued to transition diesel- and propane-powered well pumps to electric pumps, when and where possible. Electric pumps tend to be more efficient, produce lower direct greenhouse gas emissions, require less maintenance, and run more quietly than the other options. We plan to continue to make incremental improvements in this area.

U.S. Row



Advancing innovation and social impact through greater diversity

Nuveen Natural Capital understands that production systems are sustainable only if they also support and enhance social and economic well-being. This is why we strive to elevate historically marginalized groups by supporting programs that enhance inclusion in our industry, collaborating with local communities, and gaining insights from diverse stakeholders.

- **Nuffield International Farming Scholars:** Since 2015, through an investor-supported CSR program, we have sponsored 10 Nuffield Scholars and are funding two additional scholarships for 2023. Nuffield sponsors young people in the agricultural and related sectors to develop their leadership capabilities and further their education. Nuveen Natural Capital has long supported diverse scholars, including applicants in Chile and Brazil, and minority group members in the U.S., who have expertise in agriculture, natural resources and related sciences.
- **Delta Streets Academy:** We are helping the Academy provide at-risk young men in the Mississippi Delta region with high-quality education and support to help them launch careers and achieve community leadership roles. Our donation of \$10,000 from our CSR budget (per year for three years) will contribute to the education of 60 students each year. This direct investment with the Mississippi-based Academy gives them the flexibility to steward the financial support in ways it deems best for maximum impact.
- **National Black Growers Council (NBGC):** This is a new collaboration for Nuveen Natural Capital, which has become a gold sponsor of NBGC. Our support will help foster expertise among black growers in the U.S., particularly those growing row crops at scale. We envision that our relationship with NBGC can help us enhance diversity among our tenants and partners, and bring new insights and innovations to our company and the industry as a whole.

b.

TOTAL SOUTH AMERICA PORTFOLIO

South America

(NOTE: Panama is listed under South America for the purposes of this report)

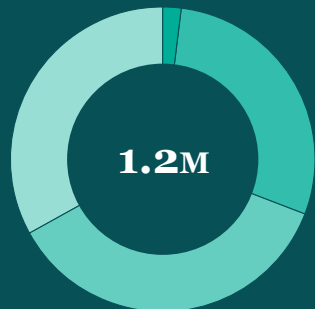
Nuveen Natural Capital operates in several South American countries, with the majority of its investments in Brazil.

● SOUTH AMERICA OFFICE LOCATIONS

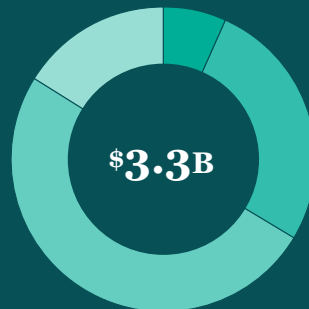


Click crop names to view statistics

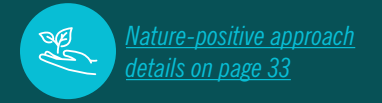
TOTAL ACRES






FAIR MARKET VALUE



Brazil Farmland



NATURE-POSITIVE PRINCIPLES	PRACTICES	INDICATORS	RESULT
 Regenerative land management	Soil health	Tillable acres with reduced or conservation tillage	42%
		Tillable acres with diverse crop rotation	30%
		Tillable acres with cover crops or relay cropping	74%
		Properties applying compost or organic amendments	90%
		Properties with soil testing at least once every 3 years	98%
	Resource optimization	Properties adopting nutrient management plans following 4Rs principles*	98%
	Integrated pest management	Properties practicing biological pest control (e.g., using insects)	98%
Promoting innovation	Adoption of, or renovation with, improved varieties†	98%	
 Nature-positive landscapes	Edge of field practices	Supporting lands covered in native vegetation (under restoration or protection)	94%
 Credible and transparent reporting	Certification	Acres certified or covered by third-party standard‡	87%

* 4Rs: right nutrients, at the right time, in the right place, and in the right quantity

† Varieties with enhanced water use efficiency, carbon sequestration, nutrient use efficiency, pest or disease resistance, etc.

‡ Including Bonsucro, Round Table on Responsible Soy (RTRS), Better Cotton Initiative (BCI), RenovaBio, and EPA RFS2

Brazil Farmland



Creating alliances to fight fires, increase diversity of income and enhance food security in rural communities

MARANHÃO, BRAZIL

Nuveen Natural Capital is part of a multi-phase project that is increasing community awareness of risks from using fire in managing agriculture, facilitating hunting, or burning residue. The project, which is aimed at communities surrounding our portfolio in Maranhão state, Brazil, is part of a partnership with Fundação de Apoio à Pesquisa do Corredor de Exportação Norte (FAPCEN), a non-profit entity that focuses on balancing food production with environmental and social responsibilities.

The project aims to create a multi-stakeholder crisis committee and to provide training to select community members, including an invitation to join the fire brigade in the region. We expect that bringing together farmers, municipal authorities and community members in a unified way will be a powerful force to combat illegal fires.

FAPCEN will also provide communities with practical training in good agricultural practices, which is valuable to smallholder farmers. In addition, by encouraging voluntary participation in fire brigades, we hope to generate alternative income sources and productive dialogue between the communities and grain producers.



Positive impacts

- May reduce the incidence of fire in both productive and conservation areas in the Cerrado region
- Offers information and training to families with small agricultural production areas
- Creates a potential alternative income source for nearly 900 people, in support of 270 families

RTRS membership

Nuveen Natural Capital is a member of the Round Table on Responsible Soy. This membership is important because RTRS is the largest global certification scheme that is dedicated to soybean production, and more than half of our Brazilian portfolio produces soy (29% is certified under RTRS). This membership began in 2022.

Brazil



Supporting seed collectors' network to restore native vegetation, support family incomes

BAHIA, BRAZIL

Nuveen Natural Capital is proud to sponsor a renovation of the headquarters for the Association of Seed Collectors of West Bahia, located in northeast Brazil. This project will enable the association to expand its work, which consists of supplying seeds to restore native vegetation and providing an income stream to the seed collectors' network, which is made up of members from local communities in the region.

The main elements of the headquarters renovation project include creating a space to process and store native seeds for restoration projects, building an administrative center for the network to engage at least three rural communities in western Bahia, and offering a training area for collectors.







Positive impacts

- Direct support for at least 70 people in the association, plus their families
- Strengthens income source for a rural community due to a more formal network and enhanced collectors' techniques
- Fortifies the region's supply chain by increasing available seeds and seedlings of native vegetation

“ Since its founding in 2006, Parque Vida Cerrado has sought to create a network of partners who promote Cerrado conservation. Nuveen Natural Capital is now supporting this work by updating the headquarters of the western Bahia Association of Seed Collectors. This initiative generates income and promotes the work of seed collectors, which can help to expand restoration efforts in the region. Engaging partners who view conservation as an integrated effort — capable of improving lives — motivates and inspires us.”

Gabrielle Bes da Rosa
Coordinator, Parque Vida Cerrado

	NATURE-POSITIVE PRINCIPLES	PRACTICES	INDICATORS	RESULT
	Regenerative land management	Soil health	Properties applying compost or organic amendments	100%
			Properties with soil testing at least once every 3 years	100%
		Resource optimization	Properties adopting nutrient management plans following 4Rs principles*	100%
			Properties implementing water efficiency improvements (e.g., drip irrigation)	100%
			Properties implementing renewable energy improvements (e.g., installing solar PV)	25%
		Integrated Pest Management	Properties practicing biological pest control (e.g., using wasps and other insects)	13%
Promoting innovation	Adoption of, or renovation with, improved varieties†	100%		
	Nature-positive landscapes	Edge of field practices	Supporting lands covered in native vegetation (under restoration or protection)	81%
	Enriching communities	Safeguard well-being	Properties with periodic health and safety risk assessment and training	100%
	Credible and transparent reporting	Certification	Acres certified or covered by third-party standard‡	80%

* 4Rs: right nutrients, at the right time, in the right place, and in the right quantity

† Varieties with enhanced water use efficiency, carbon sequestration, nutrient use efficiency, pest or disease resistance, etc.

‡ GLOBALG.A.P.

Chile



Supporting agricultural education by sponsoring a new irrigation well

CHILE

Nuveen Natural Capital sponsors the Liceo Cordillera School in Chincolco, which aims to inspire and train Chile's next generation of agricultural technicians. This sponsorship has enabled a new well to be installed, allowing the school to have access to a supply of irrigation water.

The well's water supply will support work projects of students in grades four to seven who are learning crop management techniques for both vegetable and fruit trees, while also providing water for a goat and sheep pasture. Student learning opportunities encompass topics such as irrigation and soil planting, seedling production, greenhouse cultivation, sowing, maintenance, harvesting and marketing.

The new irrigation well also will benefit the community by expanding water resources, nourishing a community garden and advancing overall sustainable agricultural development.



Positive impacts

- Benefits for 200 students and their families
- Cultivates a new generation of agricultural talent

2K+

BEEHIVES
on Chile's La Rinconada farm, supporting pollination for cherry and avocado trees.

1.7

ACRES
footprint of solar PV projects installed on two Chilean farms to power farm systems such as irrigation (fully operational in 2023).

500

TREES
planted (Quillayes, native to Chile) on a Chilean farm as part of broader efforts to restore native vegetation to help promote biodiversity.

South America Timberland



Biomonitoring to assess biodiversity and inform conservation strategies

MATO GROSSO DO SUL, BRAZIL

Biomonitoring has been adopted at a timberland property to assess the benthic macroinvertebrate communities that inhabit the bottom substrate of aquatic habitat. These macroinvertebrate communities live in extreme conditions, and include populations with varied habitats and eating habits. Their sensitivity to impacts from human-driven (anthropic) changes makes them a valuable indicator of the ecological quality for all aquatic life in the analyzed bodies of water. Data from biomonitoring can be used to guide potential conservation efforts.

In Fazenda Santo Antônio, Mato Grosso do Sul, we have begun biomonitoring an anthropized stream that has been isolated from degradation factors, and are also monitoring the natural regeneration of riparian vegetation. By including this stream in biomonitoring we can more readily assess possible water quality improvement over time.

Analysis of this biomonitoring process over a 12-month period indicated that the quality of the stream water was classified as normal (2.3 to 3.3) according to the Benthic Community Index (BCI) of Brazil's environmental agency. Additionally, no chemicals were detected in the stream water over the same period.



Positive impacts

- Preserves the health of local aquatic ecosystems
- Implements an early warning technique to detect environmental changes and enable quick action
- Supports the scientific community by collaborating with a university

South America Timberland



Empowering women and promoting renewable materials through pine resining

SÃO PAULO, BRAZIL

Pine resin is a highly versatile, renewable raw material, serving as an ingredient for hundreds of products — paints, enamels, varnishes, glues, adhesives and fuels — and as a replacement for petrochemical materials. The Jatobá property engages seven partner companies to extract resin in its São Paulo state pine forests, employing 242 people in the Nova Campina, Bom Sucesso de Itararé and Capão Bonito regions. Increasingly, women have been participating in resin collection: they now comprise 32% of the field team.

The women performing resin extraction live in communities near the farms, and they all are registered, trained and provided with safety gear for their jobs. Each month, workers earn their livelihoods by extracting between 6,000 and 7,500 kilos of raw pine resin. Work hours are flexible, to accommodate those who lead households or must be near home to care for their children.

Across the Jatobá pine forest portfolio, supporting women's health is a priority. This is why the organization takes part in "The Pink October" as part of its annual agenda of events. Throughout the month, Jatobá promotes breast cancer awareness activities among women on its 17 farms, including the women who perform resining work in the pine forests.



Positive impacts

- Advances gender inclusion in formal production chains
- Increases income potential and quality of life in rural communities
- Generates a renewable, natural tree product
- Advances responsible practices in extracting resin, with negligible impact on pine trees

“The affection and care Jatobá shows to women is very important [...] Many times, because of our routine between home and work, we end up forgetting self-care. This type of event [breast cancer awareness] alerts us to be attentive to our health. We feel embraced! Thank you very much, from my heart!”

Ana Carla Aparecida Correa Santos
Third-party resiner, Jatobá Farms, Pinus Brasil

Europe

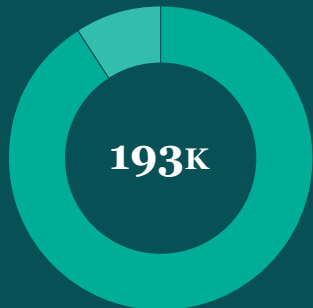
In Europe, Nuveen Natural Capital focuses its activities in Poland and Romania, which produce row crops and timber.

● EUROPEAN OFFICE LOCATIONS

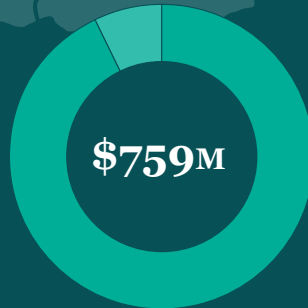


Click crop names to view statistics

TOTAL ACRES



FAIR MARKET VALUE



Europe



Nature-positive approach details on page 33

	NATURE-POSITIVE PRINCIPLES	PRACTICES	INDICATORS	RESULT
	Regenerative land management	Soil health	Tillable acres with reduced or conservation tillage	43%
			Tillable acres with diverse crop rotation	88%
			Tillable acres with cover crops or relay cropping	12%
			Tillable acres with non-living continuous cover	90%
			Properties with soil testing at least once every 3 years	21%
		Resource optimization	Properties adopting written nutrient management plans following 4Rs principles*	72%
	Integrated pest management	Tillable acres with crop protection practices that adhere to Integrated Pest Management principles	60%	
	Nature-positive landscapes	Edge of field practices	Properties compliant with mandatory buffer zones per GAEC standards†	100%
	Enriching communities	Knowledge sharing	Properties with regular, written communication to engage stakeholders	83%
	Credible and transparent reporting	Certification	Acres certified or covered by third-party standard‡	48%

* 4Rs: right nutrients, at the right time, in the right place, and in the right quantity

† Good Agricultural and Environmental Conditions (GAEC) standards of the European Union require mandatory buffer zones for watercourse protection

‡ Including GLOBALG.A.P. and EU Organic Certification

Europe



Soil Capital trial aims to advance regenerative practices, asset performance

POLAND

In Stołęż in northeast Poland, our team launched a trial project to design a Measurement, Reporting and Verification (MRV) system for soil health and soil organic carbon, with a focus on enhancing regenerative agricultural practices and overall asset performance.

In 2022, two new tenants joined the project. Both demonstrated a strong commitment to implementing Soil Capital's recommendations, including establishment of cover crops, executing crop rotation, and practicing strip tillage. Additionally, they plan to convert the farm to organic production while integrating livestock into the farming system. One of the tenants operates a suckler cow herd, which last autumn grazed clover that was later over-sown for a crop of winter wheat.

Initial soil surveys for the Soil Capital trial were carried out employing a Vidacycle smartphone app, which simplifies the process of collecting data on such parameters as worm count, infiltration rates and soil structure. Results from the Soil Capital trial at Stołęż will be shared through Nuveen Natural Capital's quarterly Rural Thoughts newsletter.



Positive impacts

- Improves soil health
- Enhances financial viability of tenants
- Expands knowledge about the benefits of regenerative agriculture

1,300

BEEHIVES

and 62 acres of wildflower strips supporting the pollination of 9,500 acres of oilseed rape.

“ Working in partnership with a professional land manager such as Nuveen Natural Capital, which has a strong focus on sustainable farming and certified production, has allowed us to grow our business in Poland. Specifically, certifying our crop production using GLOBAL-G.A.P. has helped our managers implement practices that improve farm sustainability.”

Piotr Gawecki

CEO, Laird Agro Group

Europe



Tree shelter belts project designed to curb erosion and benefit the environment

ROMANIA

Our farmland assets in southeast Romania are blessed with high-quality soil, yet the region is also at high risk of soil erosion due to climate factors. In response to this risk and to achieve broader environmental goals, the team is establishing tree shelter belts on one of our farmland properties.

The shelter belts are intended to provide agronomic and ecological support to help reduce air and water erosion, break the flow of fast-moving winds, store carbon and nitrogen in the soil, provide shade, and support crops by attracting pollinators and auxiliary insects.

The shelter belts will comprise about 35,000 trees and bushes of seven different species, including Elm, Fraxinus, Dogwood, Elaeagnus, Acer Campestre, Rosa Canina, and Tilia (lime). Trees are being planted in six rows, covering an area of more than 18 acres, stretched along a farmland plot of nearly 500 acres.

The project was carried out in collaboration with Adopt A Tree, a non-governmental environmental advocacy organization.



Positive impacts

- Improves soil health and pollinator support
- Reduces erosion
- Demonstrates the value of agroforestry systems

Asia Pacific

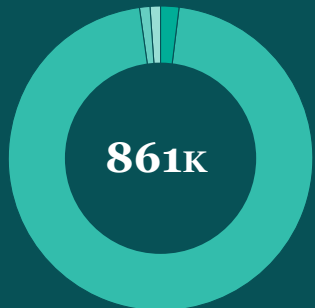
Nuveen Natural Capital's investments in the Asia Pacific region are concentrated mainly in Australia, where multiple crops are produced.

● ASIA PACIFIC OFFICE LOCATIONS

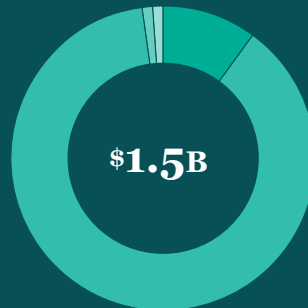


 Click crop names to view statistics

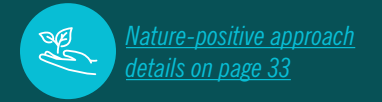
TOTAL ACRES



FAIR MARKET VALUE



Asia Pacific



NATURE-POSITIVE PRINCIPLES	PRACTICES	INDICATORS	RESULT	
	Regenerative land management	Soil health	Tillable acres with reduced or conservation tillage	100%
			Tillable acres with diverse crop rotation	73%
	Resource optimization	Properties implementing water efficiency improvements (e.g., upgraded water infrastructure)	34%	
	Nature-positive landscapes	Edge of field practices	Properties with native vegetation under restoration or protection	37%
	Enriching communities	Safeguard well-being	Properties with periodic health and safety risk assessment and training	99%
	Credible and transparent reporting	Certification	Acres certified or covered by third-party standard*	60%

*Including myBMP, Smartcane, Better Cotton Initiative (BCI), Freshcare, ISCC Canola, and Sustainable Winegrowing New Zealand

Asia Pacific



Environmental baseline project focuses on assessing GHG emissions and vegetation condition

AUSTRALIA

In 2022, we sought to establish an environmental baseline for the entire Australia farmland portfolio by assessing greenhouse gas emissions, vegetation condition and biodiversity, and water usage. The objective was to identify a starting point, guide next steps and allow for benchmarking. Priorities included developing base-period greenhouse gas accounting and assessing vegetation condition across the entire portfolio.

We identified and mapped agricultural areas of relevant Natural Resource Management (NRM) regions (excluding non-agricultural areas). The agricultural areas were then divided into land use and landcover zones. We then assessed native vegetation condition for biodiversity in each of the land use and landcover zones for both the property and NRM region levels. These zones were scored on a scale of zero (complete loss of vegetation) to 100 (undisturbed remnant vegetation). The weighted average vegetation condition at the property level was comparable to that of the relevant NRM region.



Results

- A baseline has been set which considers scope 1 and 2 emissions as well as biogenics
- Scope 1 emissions were dominated by diesel use, followed by N₂O emissions from fertilizer use and crop residues (we are working to impact these factors; see case study below)
- Biodiversity and vegetation results varied across the portfolio; these results provide a starting point to consider future projects to impact the environment and our baseline

“We are proud to be working with Nuveen Natural Capital to develop and progress its sustainability reporting. Substantial progress has been made over the past year, with significant improvements in its greenhouse gas and natural capital accounts. Nuveen is playing a leadership role in the agribusiness sector in showing how to transparently and robustly account for its environmental impacts and natural assets and we look forward to helping further progress its efforts over the coming years.”

**Professor Andrew Macintosh and
Professor Don Butler**

Barraband Consulting and The Australian
National University

Asia Pacific



Employing locally created compost to replace synthetic fertilizers and reduce GHG emissions

QUEENSLAND, AUSTRALIA

We are investing to improve soil health and structure, and to enhance reduction and removal of greenhouse gas emissions on the macadamia orchards we manage.

Among several initiatives to improve soil health and reduce emissions, the biggest contributor has been our shift from using synthetic fertilizers to using compost extensively across the orchard. We create the compost by recycling orchard by-products — offcuts, trimmings and nut husks — and combining them with manure from a local cattle feedlot and other local waste organic material. Compost is being applied across the entire 848 acres of orchard area.



Positive impacts

- Reduces emissions through lower synthetic fertilizer and transport fuel
- Removes atmospheric carbon through greater soil-based carbon capture and better tree growth
- Improves soil structure and fertility, and promotes weed control
- Achieves an estimated GHG reduction and removal of 956 tCO₂e annually
- Earned Carbon Friendly certificates of compliance under its sustainable agricultural certification



Looking Forward

We are focused on improving soil microbes, which increases tree health and, ultimately, productivity. We are currently conducting due diligence on a potential under-tree soil carbon project.

Additional resources



Global sustainability policy

Underpins the sustainability principles for all of Nuveen Natural Capital's farmland and timberland investments. This policy is consistent with the UN Principles for Responsible Investment in Farmland. Our Zero Deforestation Policy is embedded within the Global Sustainability Policy.



Farmland transparency map

Interactive mapping tool that provides an overview of property-level data for all farmland assets, including operating strategies, crop types and property boundaries.



Faces from the field

Video vignettes that showcase the perspectives of our partnering tenants and crop managers, many of whom have been working with us for decades. Our library of Faces from the Field vignettes continues to expand over time.



Sustainability Q&A

Document containing Nuveen Natural Capital's responses to sustainability-focused questions and concerns related to its investments in farmland. The Q&A is regularly updated to maintain accuracy and transparency.



Water management approach

Document sets out Nuveen Natural Capital's approach to optimizing and safeguarding water.

CLOSING STATEMENT

Nuveen Natural Capital achieved significant progress in 2022. Our progress included:

- Continuing to align our sustainability strategy with Nature, Climate and People considerations
- Reinforcing partnerships with third-party organizations across the value chain
- Aligning with evolving global protocols and maintaining certification efforts
- Upgrading our Global Sustainability Policy
- Improving the accuracy of our metrics across GHG accounting, natural capital and responsible practices
- Preparing for our future initiatives to define targets and outcomes for Nature, Climate and People

As we move forward, Nuveen Natural Capital will continue to innovate, form partnerships and evolve its approach. We intend to maintain our focus on meeting the world's expanding resource needs while minimizing our climate-related footprint and enhancing natural capital. We look forward to the journey ahead with resolve and enthusiasm.



Important information

For more information, please visit nuveen.com.

Endnotes

- 1 IPCC (2022) Summary for Policymakers. In: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. P.R. Shukla, J. Skea, R. Slade, A. Al Khouradji, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.). Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926.001
- 2 Secretariat of the Convention on Biological Diversity (2022). Monitoring framework for the Kunming-Montreal Global Biodiversity Framework. <https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-05-en.pdf>
- 3 PitchBook. (2023) 2022 AgTech Overview. PitchBook. <https://pitchbook.com/news/reports/2022-agtech-overview>
- 4 IBAT Multi-site Report. Generated under license 33359-42828 from the Integrated Biodiversity Assessment Tool on 03 May 2023 (GMT). www.ibat-alliance.org
- 5 Nowak J.D., Hirabayashi, S., Bodine, A., Greenfield, E. (2014). Tree and forest effects on air quality and human health in the United States. *Environ Pollut.* 193:119-129. DOI: 10.1016/j.envpol.2014.05.028
- 6 Recreation Use Values Database (2016) Corvallis, OR: Oregon State University, College of Forestry. <http://recvaluation.forestry.oregonstate.edu/>
- 7 IBAT PS6 & ESS6 Report. Generated under licence 33359-42366 from the Integrated Biodiversity Assessment Tool on 21 April 2023 (GMT). www.ibat-alliance.org
- 8 U.S. Department of Agriculture (n.d.) FoodData Central. <https://fdc.nal.usda.gov/index.html>
- 9 U.S. Department of Agriculture and U.S. Department of Health and Human Services. (December 2020) Dietary Guidelines for Americans, 2020-2025. 9th Edition. https://www.dietaryguidelines.gov/sites/default/files/2021-03/Dietary_Guidelines_for_Americans-2020-2025.pdf
- 10 British Nutrition Foundation (n.d.) Protein. <https://www.nutrition.org.uk/healthy-sustainable-diets/protein/?level=Health%20professional>
- 11 California Cotton Ginners & Growers Association (n.d.) How Much Cotton Does It Take? <https://ccgga.org/cotton-information/much-cotton-take/>
- 12 Kilgore, G. (2023) How Many Trees Does it Take to Build a House? (Every Home Type) 8 Billion Trees. <https://8billiontrees.com/trees/how-many-trees-does-it-take-to-build-a-house/>

Risks and other important considerations

These materials are intended for informational and discussion purposes only. These materials may only be circulated to persons to whom they may lawfully be distributed. Persons who do not fall within such descriptions may not act upon the information contained in these materials. Any entity responsible for forwarding this material to other parties takes responsibility for ensuring compliance with local laws, and in particular any applicable financial promotion rules.

The information presented in these materials is believed to be materially correct as at the date hereof, but no representation or warranty (express or implied) is made as to the accuracy or completeness of any of this information. Data was taken from sources deemed reliable, but we cannot guarantee its accuracy. The statements contained herein reflect opinions as of the date written and are subject to change without further notice.

This document is not a prospectus and does not constitute an offer to the public. No public offering or advertising of investment services or securities is intended to have taken effect through the provision of these materials. It is not intended to provide specific investment advice including, without limitation, investment, financial, legal, accounting or tax advice, or to make any recommendations about suitability for any particular investor.

Past performance is not a guide to future performance. Investment involves risk, including loss of principal. The value of investments and the income from them can fall as well as rise and is not guaranteed. Changes in the rates of exchange between currencies may cause the value of investments to fluctuate.

Nothing set out in these materials is or shall be relied upon as a promise or representation as to the past or future. Farmland investments are less developed, more illiquid and less transparent compared to traditional asset classes. Investments will be subject to risks generally associated with the ownership of real estate-related assets and foreign investing, including changes in economic conditions, currency values, environmental risks, the cost of and ability to obtain insurance and risks related to leasing of properties.

Responsible investing incorporates Environmental Social Governance (ESG) factors that may affect exposure to issuers, sectors, industries, limiting the type and number of investment opportunities available, which could result in excluding investments that perform well.

No direct or indirect compensation was given in return for this endorsement. No material conflicts of interest exist on the part of the individual(s) giving the endorsement, resulting from their relationship with Nuveen, LLC, or its investment specialists. Results experienced may not be representative of the experience of other associated parties, and there is no guarantee of future performance or success.

Nuveen, LLC provides investment advisory solutions through its investment specialists.

©2023 Nuveen, LLC. All rights reserved.