Timberland sustainability report
2018
Timber portfolios are subject to certain risks such as market and investment style risk. Timber investments are subject to various risks, including fluctuations in property values, higher expenses or lower income than expected, and potential environmental problems and liability.

This material is provided for the informational purposes only and should not be regarded as a recommendation or an offer to buy or sell any product or service to which this information may relate. The strategies discussed may only be appropriate for certain qualified investors.
We are pleased to present Nuveen’s 2018 Timberland Sustainability Report, the first to be published since TIAA acquired a majority stake in GreenWood Resources in 2012.

This alliance has given investors access to an exceptional management group skilled in timber investment strategies. GreenWood’s focus on sustainability stretches back to its founding in 1998, and this new report pays tribute to that legacy and underscores our shared commitment to sustainable timber management.

Our timber practices, like our farmland practices, seek to conform to the UN-backed Principles for Responsible Investment (PRI) Farmland Guidelines, which Nuveen helped to develop and was among the first to sign in 2011. The PRI Guidelines are:

1. Promoting environmental sustainability
2. Respecting labor and human rights
3. Respecting existing land and resource rights
4. Upholding high business and ethical standards
5. Reporting on activities and progress toward implementing and promoting the Guidelines

Aligned with these guidelines we have created 16 key performance indicators (KPIs) specifically for timber. For 2017, we achieved 100% scores on 10 of the 16 KPIs, with no score below 75%. In some cases, scores were lower because we are still earning relevant third-party certifications, or are building capabilities to refine our evaluation of certain operational factors. KPI performance details begin on page 12.

Nuveen and GreenWood are keenly focused on gaining independent, third-party verification of our sustainability advancements globally, both to complement our internal programs and verify best practices. We have been particularly creative in finding suitable certifications where our timber assets are unique in the marketplace. These efforts are a hallmark of our investment and operational processes, and we aspire to set the industry standard in this regard. We complement certifications with twice-a-year attestation activities, which reinforce our commitment to continuous improvement (see page 6).
Beyond striving to meet the PRI Guidelines, we are aligning our processes to advance the UN Sustainable Development Goals (SDGs), which were set forth in late 2015 as a “call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity.” Nuveen’s position as a long-term investor, our fiduciary responsibility to retirement plan participants, and Nuveen’s and GreenWood’s long history of acting with integrity, uniquely prepare us to impact many SDG goals.

GreenWood achieves forest productivity and sustainable practices through a thoughtful forest management approach. GreenWood has more than 100 professionals working in field locations across North America, Latin America, Europe and Asia, and complements these professionals with an array of local forestry and related contractors who add unique value to every operation. This report features one timber operation that embodies our commitment to sustainability: Lewis and Clark Timberlands, in the U.S. states of Oregon and Washington. Lewis and Clark combines a science-driven approach to forest management with a powerful focus on building the local community through its economic contributions, creation of rewarding local jobs, and diligence in preserving nature’s integrity and beauty (see page 10).

We look forward to working with our partners and stakeholders to determine how we can further improve upon the achievements captured in this inaugural report. If you would like to discuss the content of this report, please contact Nuveen’s head of Real Assets Sustainability, Sanaz Raczynski, at sanaz.raczynski@nuveen.com.

Justin Ourso                Jeff Nuss

Advancing the U.N. Sustainable Development Goals (SDGs)

We see our timberland sustainability efforts as helping to advance the Sustainable Development Goals (SDGs) adopted by the United Nations member states in 2015.

The SDGs comprise a set of 17 global goals and 169 subtargets aiming to drive action and collaboration globally to create a more sustainable and equitable future. We have identified three goals that are most relevant to our timberland investing activities:

SDG 6 – Ensure availability and sustainable management of water and sanitation for all.

GreenWood impacts subtargets within this goal related to water quality and the protection of water-related ecosystems.

- GreenWood’s tree farms protect community headwaters by reducing chemical use and minimizing impacts of operations through such tactics as appropriate stream buffering and the timing of harvests.
- GreenWood protects water quality and aquatic fauna in sensitive streams in the Pacific Northwest through streamside buffer zones, in-stream coarse woody debris, properly sized culverts, and fish passages.
SDG 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

GreenWood can specifically impact the subtargets within this goal related to protecting labor rights and safe and secure working environments.

• In Brazil, we employ 68 asset-level employees, and our establishment, maintenance and harvesting of tree plantations provides stable, year-round jobs for about 120 contract workers in rural communities of Mato Grosso do Sul.

• In Colombia, our tree farm runs a comprehensive safety monitoring program for all local GreenWood staff and third-party contractors, along with targeted safety training.

SDG 15 – Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss.

GreenWood impacts the subtargets within this goal related to promoting the implementation of sustainable management and restoration of forests.

• Our project in Poland uses lower-quality agricultural land for tree plantations, reducing local pressure on natural forest reserves to meet the community’s need for heat and power, as well as industry’s need for wood fiber–based products.

• GreenWood’s sustainable forest management practices across our properties support forest health, decrease the risk of wildfires, and mitigate climate change through carbon sequestration.
Overview of responsible investing in timberland

The increasing demand for wood and the growing commitment to better manage the world’s forests has meant that timber continues to offer attractive investment opportunities.

Working as a global team, Nuveen and GreenWood balance industry knowledge with local insights to seek opportunities for investors interested in owning new or existing timberland assets.

Sustainable, profitable timberland businesses support the economies of rural communities, creating sustainable, living-wage jobs in an era of continuing global urbanization. In addition to promoting conservation, our business practices promote sustainable wood production to meet the demands of the lumber, veneer, chips and renewable energy feedstock markets, and to allow for regular and predictable cash flow.

Along with our investors, we know that profitability and stewardship go hand in hand. Among other things, we manage our timberlands to meet or exceed local environmental laws and regulations and seek certification under globally recognized, third-party timberland management standards, such as the Forest Stewardship Council (FSC®), Programme for the Endorsement of Forest Certification (PEFC®), Sustainable Forestry Initiative® Inc. (SFI), and others.

PREVENTING DEFORESTATION

As it manages its timber assets globally, GreenWood is committed to preventing deforestation. We are committed to sustainable management of forested areas, and we use marginal agricultural land, such as pasture land, for timber production in environmentally sensitive regions.
TIMBER MANAGEMENT takes a strong partnership

Investors
Nuveen and GreenWood have established investment entities to make timber investments. These entities provide equity capital for timberland purchases as well as capital to execute property management activities such as site and soil preparation, plant material (e.g., seedlings) and planting activity, and plantation improvements such as engineering and equipment (culvert, bridge and road construction, fencing, etc.) TIAA and its co-investors (mainly institutional investors) make capital contributions to the investment entity, and receive capital distributions.

Asset manager
GreenWood is a vertically integrated asset manager, providing the investment management (acquisitions, accounting and administration, portfolio management and reporting) and property management at the asset level (managing all timber operations from establishing the farms, silvicultural activities throughout the life of the asset, and coordinating harvest, transport and sale of the timber).

Timberland operators and contractors
GreenWood manages day-to-day operations of the timber investments in almost all cases. In general, the asset-level GreenWood property management team comprises field technicians and area supervisors, as well as local administrative and accounting support staff. Contractors perform key activities – site preparation, planting, weed and pest control, pruning, and harvesting and transportation – supervised by the asset-level GreenWood professionals.
Due diligence process

*We adhere to rigorous policies and processes to meet relevant environmental standards, labor regulations and legal requirements.*

**Preacquisition due diligence**

Our formal investment process examines each investment opportunity prior to acquisition and applies a set of criteria for determining potential investments including:

- Thorough background checks on all counterparties and contractors
- Environmental assessment by world class entities such as AECOM
- Traditional financial underwriting, market and competitive landscape assessment
- Detailed legal title review for purchased properties, and review of risks and mitigating actions

We consider the five PRI guidelines as they apply to planned investments — during preinvestment due diligence and throughout the selection of partners, contractors and submanagers acting on GreenWood’s behalf.

Where local conditions dictate and resources permit, GreenWood proactively engages local stakeholders and community members. We believe that maintaining favorable community relations and partnering in local development can enhance investors’ long-term returns by enabling coordinated responses to challenges and ongoing access to a skilled, creative workforce.

**Postacquisition management**

Following acquisition, we reassess and monitor asset performance annually using attestation documents and third-party certifications. Ongoing oversight through GreenWood’s Forest Management Systems and application of its Standard Operating Procedures ensure that assets are managed responsibly.

GreenWood requires best-practice tools for spatial and tabular resource data management, analysis and modeling to help meet our sustainability commitments. Key functions of the GreenWood Forest Management Systems are:

- Data storage for stands of trees
- A mapping system
• Annual planning and tracking operation management
• Recording harvesting operations, timber transport and sales
• Inventory analysis
• Timber growth and yield modeling
• Timberland wood supply forecasting and long-term forest planning

During the first part of each year, GreenWood completes an external attestation for Nuveen; and then, later in the year, it completes an internal attestation developed by GreenWood’s operation team. This twice-a-year approach helps ensure quick review of properties newly added to the portfolio while reinforcing the importance of the attestation topics among existing asset managers.

The early-year attestation examines operational issues, the physical property, and how an asset interacts with and manages third parties during the prior year. Assets confirm the topics that have been addressed and, for those not addressed or with noted deficiencies, must submit an explanation for why they have not met expectations, plus corrective actions. The late-year attestation evaluates similar topics during the course of the year, and requires that asset managers provide brief answers on various attestation topics. This process allows GreenWood managers to evaluate individual assets, and ideally indicate areas for improvement or for which assistance might be needed from the enterprise.

We strive to achieve third-party forest certification for GreenWood’s assets, both to provide independent assurance of our own due diligence and to signal to the marketplace our commitment to sustainability.

Our tree farms seek certification under globally recognized forest management standards such as the Forest Stewardship Council, Programme for the Endorsement of Forest Certification, and Sustainable Forestry Initiative. These standards require certificate holders to be evaluated annually by an independent auditor whose reports are publicly available. These third-party standards are considered best practice in the industry, and all of them emphasize social responsibility, environmental stewardship, and economic viability. Several of the certification organizations that audit GreenWood’s forests are approved by multiple certification programs.
Timberland holdings (gross acres)

Portfolio diversification by geography, species and product market

UNITED STATES
354,600

COLOMBIA
59,700

CHILE
5,100
Productivity and protection: Lewis and Clark Timberlands

Encompassing about 162,000 acres — more than 250 square miles — the forest and timberland maintained by Lewis and Clark Timberlands is among the largest of our global timber assets. The forest is able to produce a relatively stable harvest, which can be sustained in perpetuity to provide timber to a range of markets.

The timberlands are located in the Pacific Northwest of the U.S. (encompassing Oregon and Washington), a region that receives rainfall ten months out of the year. Such conditions help Lewis and Clark’s forestry professionals sustain a rich silviculture of mixed stands — hemlocks, Douglas-firs, alder, conifers — which represent the state of the art in forest productivity while offering the people of Clatsop County a more natural aesthetic.

Like other Nuveen assets, third-party certifications play an important role in affirming the quality of Lewis and Clark’s sustainability efforts. The forest has been certified by the American Tree Farm System® since the 1940s, and in 1999 became one of the first to be certified by Sustainable Forestry Initiative® Inc. (SFI). The latter certification demonstrates Lewis and Clark’s commitment to sustainable timber practices through appropriate training and education programs for both staff and contractors.

Managing such a vast amount of forest land requires talented people and an array of equipment and supplies. While Lewis and Clark’s core staff comprises just a dozen people, the organization engages more than 250 contract workers throughout Clatsop County and sponsors internships for many who are pursuing a career in forestry and natural resources. Supply, fuel, maintenance and equipment purchases directly support local small businesses, and the group contributes more than $15,000 each year to local charities, as well.

Operationally, these sustainable practices establish Lewis and Clark Timberlands as a leader:

- **Protecting water supplies** — As the largest manager for the county’s municipal water supplier, Lewis and Clark helps to ensure that the community enjoys clean water by complying with relevant rules, regulations and business ethics.
• **Herbicide management** — In most cases, after a stand is planted, it receives only a single application of herbicide, which lasts through its entire rotation of 40 to 50 years.

• **Wildlife protection** — Lewis and Clark considers the needs of rare, threatened or endangered species as part of the forest planning and maintenance processes. Through a combination of investments and grants, Lewis and Clark is also supporting fish habitats by creating or preserving “fish passages” for salmon and other species.

• **Recreation and beauty** — Lewis and Clark is open to a range of nonmotorized recreational activities on its forest lands, including hiking, cycling, nature watching, hunting and fishing.

Half the foresters on Lewis and Clark’s full-time staff were born and raised in the region, and some served as interns before being hired for their current positions. For this reason, in addition to being foresters, they view themselves as ambassadors to the community with a commitment to improving quality of life in the region.
Tracking progress on the Guidelines (KPI results)

As we execute our investment strategy, Nuveen and GreenWood are committed to pursuing specific sustainability goals for our timberland portfolio, and have developed specific forest-focused Key Performance Indicators (KPIs) to measure our progress in meeting the PRI Guidelines. This section explains how we put each Guideline into practice in our timber investments. In many cases, our progress and results are confirmed or certified by independent, third-party organizations.

GUIDELINE 1: Promoting environmental sustainability

We are committed to protect the timberland environments in which we invest. We measure our performance in this area using 8 KPIs.

Progress against the KPIs is rated based on the following scale:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>95+%</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>80 – 94%</td>
<td>Opportunities for improvement exist</td>
</tr>
<tr>
<td>&lt;80%</td>
<td>Improvement needed</td>
</tr>
</tbody>
</table>
KPI 1.1 — Preacquisition environmental integrity

- Achieved a 100% rating on this KPI. All acquired assets undergo a due diligence process that includes environmental components (See page 6).

KPI 1.2 — Postacquisition annual assessment

- Achieved a 100% rating. Each year, all properties must complete a TIAA/Nuveen attestation as well as an internal attestation (See page 7).

KPI 1.3 — Chemical and production inputs

- Achieved an 87.8% rating on this KPI. Although pesticides and fertilizers are used across all GreenWood properties, not all acreage is certified. This is because assets often comprise both productive and nonproductive ground, and certification sometimes involves only a subset of the total ground.

KPI 1.4 — Site productivity

- Achieved a 79.6% rating on this KPI. Some assets do not currently sample or evaluate soil health or site productivity. We intend to ensure that all assets ultimately track harvest volumes and acres harvested to monitor projects’ sustainability. Additionally, teams at several of our assets take part in university-led cooperatives that focus on improving soil health and forest productivity.

KPI 1.5 — Biodiversity conservation

- Achieved a near-100% rating (98.7%). There are certain differences in certification programs: some require conservation areas that must be monitored, while others do not. Certain SFI-certified assets are known habitats for rare, threatened or endangered species, and our managers avoid operating in those areas.

KPI 1.6 — Water protection

- Achieved a 100% rating on this KPI. Our practices in a given location meet or exceed the relevant legal requirements. Certification program audits often focus on water impact, and any findings of noncompliant practices are mitigated through remediation.

KPI 1.7 — Forest carbon

- Achieved a 78.5% rating. Some GreenWood assets have not yet been evaluated. We foresee potential for this rating to increase because we have begun evaluating assets for potential carbon storage or sequestration projects.

KPI 1.8 — Forest protection

- Achieved a 100% rating on this KPI. See details on this topic related to certification (page 6) and attestation (page 7).
GUIDELINE 2: Respecting labor and human rights

We respect labor and human rights in the locations in which we invest. Consistent with local laws, we prioritize protections for core labor rights relating to child labor, forced labor, discrimination, freedom of association, and collective bargaining; and strive to preserve a safe and healthy work environment. We track our performance in this effort through two KPIs.

<table>
<thead>
<tr>
<th>Number</th>
<th>Topic</th>
<th>KPI</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Labor compliance</td>
<td>Percentage of on-site managers agreeing to comply with national, regional and local labor laws</td>
<td>100.0%</td>
</tr>
<tr>
<td>2.2</td>
<td>Worker health and safety</td>
<td>Percentage of acres with safety programs in place, conducting safety trainings, and contractor safety audits</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

KPI 2.1 — Labor compliance

• 100% of on-site managers and staff agree to comply with appropriate labor laws. Both the Nuveen and GreenWood attestation processes call for reporting any legal action involving an asset. Additionally, all certifications require certified entities to follow local, national and, in some cases, international law.

KPI 2.2 — Worker health and safety

• We have achieved a 100% rating. GreenWood conducts annual safety training, and certification programs require such training for employees and, sometimes, contractors. Both asset managers and third-party contractors generate annual safety reports.

GUIDELINE 3: Respecting existing land and resource rights

We engage with community stakeholders to determine and address reasonable local concerns, while carefully managing forests in biologically, geologically, archeologically, historically and visually significant areas. We track our performance in this area with two KPIs.

<table>
<thead>
<tr>
<th>Number</th>
<th>Topic</th>
<th>KPI</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Ownership and local land rights</td>
<td>Percentage of total acreage with formal title search and review completed to verify change of title/ownership</td>
<td>100.0%</td>
</tr>
<tr>
<td>3.2</td>
<td>Indigenous people’s rights</td>
<td>Percentage of total acreage that is compliant with applicable indigenous rights and activities</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

KPI 3.1 — Ownership and local land rights

• We have achieved a 100% rating for land ownership and chain of title verification. This is accomplished through attestation and acquisition due diligence. Annual attestations (see page 7) capture details of any disputes or legal proceedings.

KPI 3.2 — Indigenous people’s rights

• We have ensured that 100% of total acreage complies with appropriate U.S. federal laws, aboriginal heritage registers or other indigenous rights, with such compliance verified by relevant certifications.
GUIDELINE 4: Upholding high business and ethical standards

We manage investments in a manner compliant with all applicable laws and regulations and conduct appropriate training and oversight to ensure compliance with the Foreign Corrupt Practices Act. We also conduct ongoing ethics training for all employees and promote awareness of local sensitivities and concerns. We track our progress using four metrics.

<table>
<thead>
<tr>
<th>Number</th>
<th>Topic</th>
<th>KPI</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Lands under certification</td>
<td>Percentage of total acres that have obtained and comply with a well-recognized forest certification program (FSC, PEFC, SFI, etc.)</td>
<td>87.8%</td>
</tr>
<tr>
<td>4.2</td>
<td>Compliant with applicable laws and regulations</td>
<td>Percentage of assets complying with applicable national, regional, and local laws and regulations</td>
<td>100.0%</td>
</tr>
<tr>
<td>4.3</td>
<td>Staff training on business and ethics</td>
<td>Percentage of company staff completing annual Foreign Corrupt Practices Act (FCPA) training</td>
<td>100.0%</td>
</tr>
<tr>
<td>4.4</td>
<td>Community engagement</td>
<td>Percentage of assets that have programs in place to engage with local communities</td>
<td>90.4%</td>
</tr>
</tbody>
</table>

KPI 4.1 — Lands under certification
• Approximately 87.8% of our forest acreage has been certified by independent, third-party organizations. This percentage was calculated by comparing all certified acres against total productive areas.

KPI 4.2 — Compliant with applicable laws and regulations
• 100% of our assets have met this KPI. Part of both Nuveen and GreenWood attestation processes require reporting any legal action involving an asset, and all certifications require certificate holders to follow relevant laws.

KPI 4.3 — Staff training on business and ethics
• We have achieved 100% on this KPI, thanks to GreenWood’s global training program on ethics, which company staff complete each year. Employees also can access an electronic library of training materials and policies.

KPI 4.4 — Community engagement
• About 90% of our assets conduct community engagement programs. Those assets that do not currently have such a program are either building them or are in transition.
• Any community engagement program or activity performed by local-asset staff is included in this metric, with the entire acreage of that specific asset being credited with the program.
• Examples of our activities include: funding local schools, creating recycling programs, helping to support disabled and needy children, advancing social equality, taking part in watershed councils, forestry education collaborations, and joining in volunteer activities.
GUIDELINE 5: Reporting on activities and progress toward implementing and promoting the guidelines

The PRI Guidelines form a cornerstone for how Nuveen builds and manages its global timber portfolio. Our 2018 Timberland report demonstrates Nuveen's commitment to implementing and promoting the Guidelines.

In this report, we have used KPIs that address the sustainability dimensions of our timberland investments and provide transparency on our activities. We are committed to using voluntary third-party certification as a way for our stakeholders to ensure that defined and appropriate industry best practices are being followed. We will continue to evolve the KPIs to account for shifting challenges as we operate under the Guidelines.

Beyond reporting, Nuveen and GreenWood are committed to advancing the art and science of forest management to improve productivity and sustainability. GreenWood conducts extensive research in the area of economics and science for internal use and for publication. This work encompasses two areas:

- **Economics research and education** — GreenWood’s Economics Research Group leads the research program on forest economics and timberland investment. Applied economic research on a range of topics related to plantation investments in developed and emerging markets supports strategy development, investment decision-making, and management activities. The Group uses independent and third-party research to develop proprietary models of markets, prices, individual timberland investments, and multiasset timberland portfolios.

- **Biological research and education** — The execution and oversight of GreenWood’s science and biological research and plant material deployment are implemented through our global and regional professionals. Through the years, GreenWood’s Biological Research team has published numerous articles in scientific journals related to multiple timberland species in many geographies. Excellence in growing trees through the deployment of elite plant material and intensive silvicultural management strategies is central to our investment strategy.
CONCLUSION

We are pleased to have achieved 100% ratings on 10 of our 16 KPIs, and are committed to demonstrating progress on the remaining KPIs as we continue to enhance our processes and earn additional third-party certifications. As our portfolio grows and we expand into new geographies, we will continue to uphold high standards for the local partners with whom we work.

This report was developed in consultation with Nuveen staff responsible for timber investments, as well as through research involving our asset manager, GreenWood, and stakeholders that provided insight and context on key issues. We thank SustainAbility Inc. for its assistance with creating this report.
For more information, please visit nuveen.com.

Risks and other important considerations
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