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A FOREST TRENDS INITIATIVE



# View from the Understory

## State of Forest Carbon Finance 2016

### Overview

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# About Forest Trends' Ecosystem Marketplace

**Ecosystem Marketplace**, an initiative of the non-profit organization Forest Trends, is the leading global source of information on environmental finance, markets, and payments for ecosystem services. As a web-based service, Ecosystem Marketplace publishes newsletters, breaking news, original feature articles, and annual reports about market-based approaches to valuing and financing ecosystem services. We believe that transparency is a hallmark of robust markets and that by providing accessible and trustworthy information on prices, regulation, science, and other market-relevant issues, we can contribute to market growth, catalyze new thinking, and spur the development of new markets, and the policies and infrastructure needed to support them. Ecosystem Marketplace is financially supported by a diverse set of organizations including multilateral and bilateral government agencies, private foundations, and corporations involved in banking, investment, and various ecosystem services.

**Forest Trends** works to conserve forests and other ecosystems through the creation and wide adoption of a broad range of environmental finance, markets and other payment and incentive mechanisms. Forest Trends does so by 1) providing transparent information on ecosystem values, finance, and markets through knowledge acquisition, analysis, and dissemination; 2) convening diverse coalitions, partners, and communities of practice to promote environmental values and advance development of new markets and payment mechanisms; and 3) demonstrating successful tools, standards, and models of innovative finance for conservation.

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# Foreword

Last year around this time we were preparing to attend the Paris climate negotiations, waiting to know whether countries would reach the first truly global agreement on climate change and whether that agreement would recognize the critical role of forests in meeting our scientifically non-negotiable, emissions reductions targets. On October 4, 2016, the threshold for entry into force was achieved, and the agreement will enter into force on November 4, 2016—earlier than even some of the most optimistic onlookers predicted.

The Paris Climate Agreement is just 32 pages long, but nestled within the pared-down document, a mere two paragraphs have big implications for forests worldwide and for those working to create new mechanisms and incentives to channel finance towards forest protection. Article 5 sends a strong signal for managing and protecting global forests, and in particular to the policy proposal known as Reducing Emissions from Deforestation and forest Degradation (REDD+), by encouraging parties to “take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases...including through results-based payments.”

The slightly longer Article 6 establishes a broad framework for “collaborative approaches” that allow for the use of carbon markets. It also lays the foundation for “voluntary cooperation” among parties that might want to transfer “mitigation outcomes” as part of an international carbon market that both reduces emissions and promotes sustainable development. Also earlier this month, the International Civil Aviation Organization, representing airlines, which fall outside of the Paris Agreement, reached a parallel agreement to limit emissions from international flights through a market-based mechanism that could potentially include carbon offsets from forests and land-use.

Although these two policy developments signal a possible turning point in the scale of results-based finance flowing to landscapes, forest carbon finance is already a reality for governments, companies, and individuals who pay for verified emissions reductions from avoided deforestation, tree-planting, improved forest management, and other carbon-storing land-use activities. Our data indicate that forest carbon projects are protecting 28 million hectares of forest. Historically, sales of emissions reductions have occurred mostly in “voluntary” markets, but also in “compliance” markets, and increasingly in non-market “payments for performance.” Taken together, these finance channels resulted in nearly \$900 million in *new* payments for forest-based emissions reductions in 2015.

We at Forest Trends’ Ecosystem Marketplace have been tracking these developments and publishing this report series since 2009, when a forests-inclusive global climate agreement seemed a far-off ambition. Covering the value of last year’s results-based forest carbon payments, this report describes the perspective of the growing “understory”—the fruitful bottom-up efforts that ground-truth the idea that forests’ contribution to curbing dangerous climate change can be robustly measured and monitored and that forests-inclusive climate policy can indeed target capital towards altering unsustainable land-use practices while contributing towards our Sustainable Development Goals.

The title of this year’s report, *View from the Understory*, acknowledges the years of effort on-the-ground by people testing out how forests, when left standing, can be critically important in slowing climate change while improving the quality of peoples’ lives—at the local level and in the here-and-now. Results-based approaches, first tested in the voluntary carbon market, are now being considered in compliance carbon markets and in large-scale, non-market agreements among governments and even the private sector. Spurred by bottom-up sub-national movements, jurisdictional approaches are gaining traction in the wake of slower-moving national and supranational policies and testing again how we can value forest carbon. The current momentum is resulting in hectares conserved, people benefitted, species protected, and tonnes of carbon dioxide kept out of the atmosphere.

We are, as always, grateful to the hundreds of practitioners from across the globe who disclosed 2015 forest carbon data and the dozens of individuals that contributed their expert views to this research process.



**Michael Jenkins**

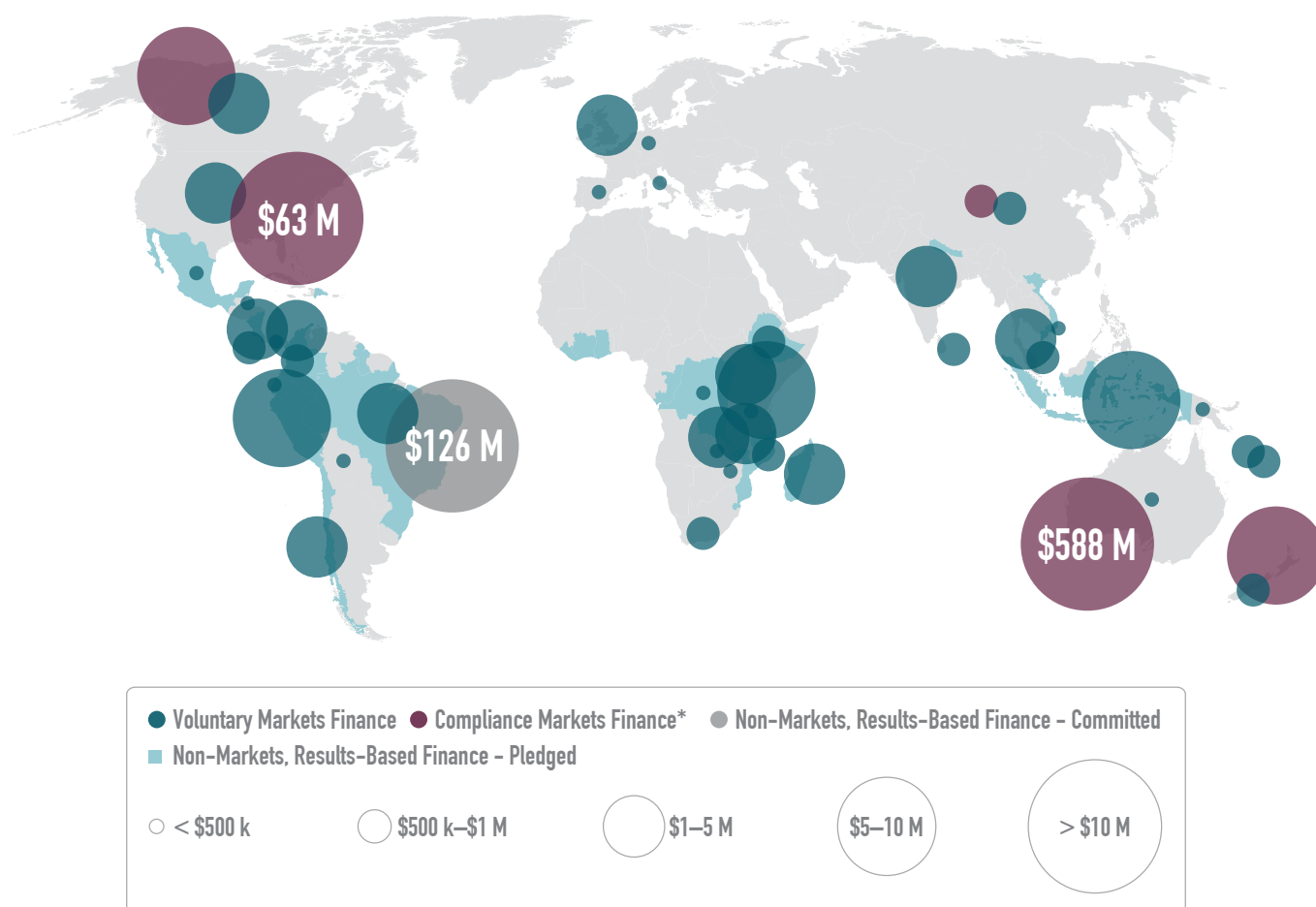
Founding President and CEO  
Forest Trends



## State of Forest Carbon Finance in 2016: An Overview

The recent ratification of the Paris Climate Agreement heralds in a new era in the global fight against climate change, with nearly every country in the world now implementing a plan to limit greenhouse gas emissions. The historic agreement recognizes forests and land-use as an essential piece of the climate puzzle—indeed, we will not be able to reach the 2-degree-Celsius temperature-rise limit, let alone the 1.5-degree-Celsius ambition, without addressing the 3 billion tonnes of carbon dioxide (BtCO<sub>2</sub>e) emissions annually from deforestation. (The Paris Agreement sets the global carbon budget at a maximum of 40 BtCO<sub>2</sub>e annually by 2030.) Recognizing the significance of forests to dodging the most severe impacts of climate change, companies, governments, and individuals channeled a record amount of results-based finance to forests in 2015. However, forest carbon finance has yet to top \$1 billion (B) annually, meaning we still value the carbon content of the world's forests at less than the market valuation of hundreds of companies, from Uber to Airbnb to Snapchat. The State of Forest Carbon Finance 2016 digs into the details of recent payments for forest carbon emissions reductions within the context of recent efforts to scale up finance and impact."

**Figure 1: Comparison of Types of Results-Based Finance by Country in 2015**



Notes: Based on \$888 M in value of the forest carbon emissions reductions newly contracted through and outside of markets in 2015.

\* Australia's Emissions Reduction Fund and British Columbia's Carbon Neutral Commitment are included in the compliance markets category even though they don't totally function like markets (there is only one buyer, the government, in both cases).

More specifically, this report describes the state of forest carbon finance in 2015 by examining the year's results-based, financial transactions and commitments to reducing carbon emissions from forestry and land-use practices. This includes market-based (voluntary and compliance) transactions and nonmarket-based commitments.<sup>1</sup> Like other reports in this Ecosystem Marketplace series, our results are based on our annual global survey of forest carbon project offset suppliers, and other sources such as the project registries of project standards, data published by governments, and interviews with market (and non-market) actors (see p. 41 for more details).

**In 2015, Ecosystem Marketplace tracked \$888 million (M)<sup>2</sup> in new results-based finance for forests — the largest influx ever tracked in this report series.** Of this committed money, \$88 M flowed through voluntary markets; \$73 M flowed through compliance markets including California's and New Zealand's; \$588 M flowed through Australia's Emissions Reduction Fund; and \$126 M flowed through non-market agreements (Figure 1). Voluntary markets channeled money into emissions reductions in at least 44 countries, while compliance markets—or those mandated by law—channeled money to domestic initiatives in the United States (through the California cap-and-trade program), New Zealand (through its government Emissions Trading System), and Canada (through the British Columbia government's Carbon Neutral Commitment). On the non-markets side, Norway, Germany, and the Brazilian oil company Petrobras paid Brazil \$126 M for reducing deforestation in the new and growing form of results-based payments. Pledges to 20 additional countries are “on the table.”

The *State of Forest Carbon Finance 2016* documents a time of transition. Developers of forest carbon projects for the voluntary carbon markets are struggling to make their projects profitable from carbon finance alone while also trying to understand how they fit into a post-Paris world, in which every country that is party to the UNFCCC has climate commitments. Those governments that are designing or growing carbon markets also face post-Paris conundrums: How will their bottom-up efforts fit into (and influence) the international rules for trading emissions-reduction units being developed under Article 6? How will tropical forest governments implement the kinds of reforms needed to attract results-based payments? Will those payments be adequate enough to navigate a development path that conserves rather than destroys their forests?

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<sup>1</sup> In past reports, we included “REDD+ readiness” finance, which covers money that lays the groundwork for results-based finance and includes activities such as stakeholder engagement and institutional capacity-building. For this data we drew on the Forest Trends' REDDX initiative; however, the REDDX initiative did not track readiness commitments last year, so we do not have a 2015 update. Nevertheless, last year's *State of Forest Carbon Finance 2015* report already documented a marked trend of readiness finance dwindling as countries moved towards implementation, and we expect that this trend has continued into 2016.

<sup>2</sup> In this report, all monetary values are in US\$ (\$), unless otherwise noted.

# Historical Forest Carbon Finance Commitments Top \$6 B

Since we began this report series, Ecosystem Marketplace has tracked a collective **\$6.0 B in forest carbon finance**. We track “commitments” at the point of contract between parties, regardless of whether the counterparties are private or public (see p. 41 for more details). This 2016 report tracks newly committed finance for forest carbon emissions reductions within two major categories: *market-based payments* and *non-market-based payments* (Table 1).

Market-based payments can be broken into two types: voluntary and compliance, with voluntary payments being made by buyers who act of their own volition and compliance payments being made by those who act because they are legally required to do so. In both cases, the buyers take ownership of verified emissions reductions either to “offset” their own emissions or to resell the tonnes to end-users. Because transparent information on demand for forest carbon offsets, particularly among voluntary buyers, is scarce outside of this report, we focus much of the real estate in this report on describing market dynamics (see p. 18–21). (In fact, this report used to be called the State of Forest Carbon *Markets* not *Finance*.)

**Ecosystem Marketplace began tracking non-market payments two years ago when it became clear that the new types of agreements emerging between governments did not quite fit the definitions we used previously.** In short, non-market payments are bilateral or multilateral agreements (so far, these have been forged mostly between governments) to pay for emissions reductions; however, the entity making the payment does not usually take ownership of the emissions reduction or “count” it against their own climate footprint. As in markets, however, the payments only flow if the emissions reductions are verifiably achieved and are thus “results-based.” Unlike markets, these tonnes are not necessarily transferred to the financier and they don’t enter a “marketplace” with multiple sellers and buyers. (The distinction between market and non-market payments is discussed in more detail p. 27.)

**Beyond the new contracts signed in 2015, an additional \$4.4 B was pledged to tropical forest governments for results-based payments to reduce deforestation. These pledges will convert to commitments if and when a contract is signed.**

**Table 1: Summary of Types of Forest Carbon Finance, 2015, 2014, and All Years\***

Type of Finance	2015	2014	All Years
REDD readiness commitments**	Not tracked	\$229 M	\$2,758 M
Market-based payments for emissions reductions	\$762 M***	\$257 M	\$2,035 M
Non-market-based payments for emissions reductions	\$126 M	\$219 M	\$1,264 M
<b>Total</b>	<b>\$888 M</b>	<b>\$705 M</b>	<b>\$6,057 M</b>

\* Ecosystem Marketplace has been tracking forest carbon finance annually since 2009 but our data goes back as far as the early 2000s, when payments for forest-based emissions reductions were just beginning. “All years” refers to the total finance that we know of to date.

\*\* Note that REDD Readiness Commitments are drawn from REDDX data covering 13 countries, while Market-based Payments for Emissions Reductions data are drawn from a wider range of countries (59). Total global REDD Readiness Finance across all years is therefore significantly larger than \$2.76 B sample estimate provided here.

\*\*\* This market value includes Australia’s Emissions Reduction Fund’s payments for land-use offsets, worth an estimated \$588 M in 2015. We counted this finance as market-based because contracts are awarded through a competitive auction; however, there is currently only one buyer: the government. Without the Australia value, market-based payments in 2015 were \$173 M. See p. 6 for a detailed breakdown of market-based payments.



### Key Findings

- Since the beginning of this report series, Ecosystem Marketplace has tracked a collective \$6.0 billion (B) in forest carbon finance committed by governments, multilateral institutions, companies, and individuals, intended to fight climate change by conserving and managing critical landscapes that sequester carbon.
- More than 800 forest and land-use projects are currently operational or under development around the world, with the vast majority in two countries that have signaled compliance-driven markets—namely, Australia (428) and the United States (217).
- In 2015, we tracked \$888 M in new forest carbon finance commitments—\$173 M of that via markets, \$588 M through Australia’s (semi-market) Emissions Reduction Fund, and \$126 M via non-market payments for performance. (An “other” category, worth \$11 M, included, for instance, carbon neutral government purchases.)
- The bulk of the commitments came through the compliance initiatives of California and Australia, each of which set records in terms of volume and value. In California, volume was 6.5 MtCO<sub>2</sub>e valued at roughly \$63 M; in Australia volume was 60.7 MtCO<sub>2</sub>e valued at roughly \$588 M, although the Australian offsets were contracted by the government through the Emissions Reductions Fund that replaced the country’s carbon tax. Average prices were higher in compliance programs than in the voluntary market—averaging \$9.7/tonne in California and \$9.7/tonne for “carbon farming” offsets in Australia.
- The voluntary carbon market faltered slightly last year, with voluntary buyers contracting 18.2 million tonnes of carbon dioxide equivalent (MtCO<sub>2</sub>e) at a value of \$88 M—the lowest level of voluntary demand tracked since 2009. The average price fell to \$4.9/tonne.
- Outside of compliance markets, Peru, Brazil, Kenya, and Uganda were the most common project locations.
- Beyond emissions reductions, voluntary forest carbon projects that reported on co-benefits in 2015 employed almost 8,000 people, protected habitat for 376 endangered species, provided benefits to vulnerable groups, contributed to water security, built resilience to climate change impacts, and helped to clarify land tenure.
- While existing forest carbon offset supply comes almost entirely from individual projects, compliance markets such as California’s as well as emerging government-to-government agreements are signaling a demand for offsets produced at the jurisdictional scale. Some projects are actively working to “nest” their activities within jurisdictional processes and baselines, although only a few have made progress since last year.
- The Paris Agreement allows for verified emissions reductions to be transferred between countries as Internationally Transferrable Mitigation Outcomes (ITMOs), but it is not clear how forest-carbon units will be treated.
- Forest carbon finance may be increasingly channeled through compliance markets, as 15 current and future compliance markets include an offsetting mechanism, and 11 of those have developed protocols for land-use and forestry offsets. The International Civil Aviation Organization (ICAO) is also in the process of designing a global market-based measure that may include forests.
- The only non-market payments for forest-based emissions reductions made to-date have flowed from the Amazon Fund (Norway, Germany, and the Brazilian oil company Petrobras) to Brazil; from the REDD+ Early Movers program (Germany, Norway, and the United Kingdom) to Colombia and the Brazilian state of Acre; and from the Norwegian government to Guyana. The growing, results-based finance pipeline is likely to flow through the World Bank’s Carbon Fund and through continued bilateral agreements. The Green Climate Fund also could serve as a major catalyst for forest carbon emissions reductions, if it chooses to.

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### MacArthur Foundation

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Good Energies Foundation (<http://www.goodenergies.org>) supports sustainable systems that can prevent poverty and disruption caused by climate change in the Global South. Good Energies Foundation was established in 2007 and founded as an integral part of Good Energies Inc., a private equity company specialised in investing in the renewable energy and energy-efficiency industries. Good Energies Foundation's historical mission is the alleviation of future poverty in the Global South by mitigating climate change. Good Energies Foundation initially leveraged its know-how in solar photo-voltaic to provide access to clean energy, especially in the area of rural electrification. At a later stage, climate-change related solutions were added to the portfolio, including sustainable reforestation models. As temperatures rise, we believe that innovative solutions are urgently needed to prevent the future displacement and impoverishment of the world's most vulnerable populations.

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Ecosphere+ is a new venture established with the founding mission of building pre-2020 scale in the marketplace for eco-commodities; giving businesses across multiple sectors, investors, consumers and other key stakeholders access to assets from projects and programmes that are essential to delivering the <2°C carbon budget through preserving the valuable carbon stored in the biomass of tropical forests and other critical landscapes as well as physical commodities including deforestation-free agricultural produce such as coffee and cocoa created through sustainable agroforestry systems. Ecosphere+ is part of the Althelia Ecosphere Group, the successful asset management platform established to demonstrate that competitive financial returns can be fully aligned with the preservation of natural capital and social development.



New Forests invests to create sustainable and productive landscapes—for our clients and the communities where we operate. New Forests ([www.newforests.com.au](http://www.newforests.com.au)) is a sustainable real assets investment manager offering leading-edge strategies in forestry, timber processing, infrastructure, land management, and conservation. Founded in 2005, the company provides institutional investors targeted opportunities in the Asia-Pacific region and the United States and has more than AUD 3 billion and 750,000 hectares of assets under management. The company is headquartered in Sydney, Australia with offices in Singapore and San Francisco. New Forests also manages Forest Carbon Partners ([www.forestcarbonpartners.com](http://www.forestcarbonpartners.com)), an investment fund that finances and develops forest carbon offset projects and is a leading provider of forest carbon offsets to the California compliance market.

### Sponsors



InfiniteEARTH is dedicated to Sustainability Solutions that go Beyond Carbon Neutral & Sustainable. We are committed to the development of economically viable solutions to climate change and environmental degradation by addressing the underlying driver of deforestation – poverty. InfiniteEARTH's projects focus on the preservation of Endangered Species Habitat, High Conservation Value (HCV) and High Carbon Stock (HCS) Forests, and the protection of National Parks through the creation of social and physical buffer zones. Additionally, our projects are designed to meet the UN Sustainable Development Goals by funding sustainable development in rural communities through capacity building and technology transfer of low impact technologies such as solar, fuel-efficient cookstoves, aquaponics, agro-forestry ("jungle crop" model) and social benefits programs such as health care and early childhood education materials. InfiniteEarth is the developer of the Rimba Raya Biodiversity Reserve, the world's largest initiative to protect and preserve HCV, lowland peat swamp forests – one of the most highly endangered ecosystems in the world. The Rimba Raya Biodiversity Reserve aims to reduce Indonesia's greenhouse gas emissions and protect the endangered Borneo Orangutan by preserving 64,977 hectares of tropical peat swamp forest. More information can be found at <http://infinite-earth.com/>.



GreenTrees is reforesting one million acres of marginal farm land in the Mississippi Alluvial Valley. To date they have planted over 30 million trees on 120,000 acres, in partnership with private landowners. The tree plantings have generated millions of tonnes of verified carbon credits that are registered on the American Carbon Registry (ACR). Those credits account for the vast majority of domestic forestry credits ever registered on the voluntary market. However, GreenTrees' project is about much more than generating carbon credits. One-third of all emissions have come from land-use change, namely deforestation. By reforesting land GreenTrees is helping to bend the climate curve, restore species habitat, clean the water, and support the local and global economy. Trees are nature's technology, the only readily deployable and scalable solution to climate change.

#### **BAKER & MCKENZIE**

Baker & McKenzie has been at the forefront of global climate change law for more than fifteen years. Our team of more than 60 lawyers across the globe have worked on numerous pioneering deals, including writing the first carbon contracts, setting up the first carbon funds and advising on the first structured carbon derivative transactions. We continue to advise on the design of international climate law, on leading market transactions and the implementation of the Paris Agreement. Our practice is driven by climate mitigation, environmental enhancement and the development of low carbon economies and assisting in climate adaptation. We advise on programs, projects and incentive schemes across global, regional and national economies for emissions reductions, clean and renewable energy, bio-energy, biodiversity enhancement and environmental infrastructure. Our legal expertise helps clients structure, finance, develop, implement, commercialize, monetize or comply with the economy-changing activities that these programs, projects and incentive schemes are designed to deliver.



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### **Coastal and Marine Initiative**

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### **Communities Initiative**

Strengthening local communities' capacity to secure their rights, manage and conserve their forests, and improve their livelihoods

### **Ecosystem Marketplace**

A global platform for transparent information on environmental finance and markets, and payments for ecosystem services

### **Forest Policy, Trade, and Finance Initiative**

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### **Water Initiative**

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Learn more about our programs at [www.forest-trends.org](http://www.forest-trends.org)