



## CASE STUDY

# THE FOREST RESILIENCE BOND (FRB)

JUNE 2020

### EXECUTIVE SUMMARY

### SYNOPSIS

Developed by Blue Forest Conservation, the Forest Resilience Bond (FRB) is a multi-stakeholder model that uses upfront investment from private and philanthropic investors to fund forest restoration activities. Beneficiaries, including public agencies and state utilities, reimburse investors with principal and returns following project completion. By drawing on private investment capital, the FRB model aims to increase the pace and scale of restoration activities across the western U.S.

The first pilot project (the Yuba FRB) was launched in 2018 on the Tahoe National Forest. The project benefits from concessional capital provided by philanthropic funders to mobilize commercial private capital. In turn, paying beneficiaries such as the U.S. Forest Service and Yuba Water Agency will repay investors for completion of work. The FRB model and pilot project provide several useful insights for structuring or investing in conservation finance, including:

- A patient project sponsor is crucial to the success of innovative and bespoke blended finance models
- Pilot transactions are time-intensive and costly but can play an “icebreaker” role in the market
- Pay-for-performance metrics are not always appropriate or necessary
- Concessional capital providers do not need to be subordinate to be catalytic
- Blended finance is a valuable structuring tool in developed markets
- Blended finance can pave the way for public agencies to find innovative ways to finance projects

Project sponsor	Blue Forest Conservation
Model	The FRB is a public-private partnership that leverages upfront private capital to finance and accelerate forest restoration across the western U.S.
Launch date of pilot project	October 31, 2018
Investors	The Rockefeller Foundation (concessional), The Gordon and Betty Moore Foundation (concessional), Calvert Impact Capital (commercial), CSAA Insurance Group (commercial)
Beneficiaries (Payors)	Yuba Water Agency, California State Government (including Cal-Fire and Sierra Nevada Conservancy), U.S. Forest Service
Capital Structure	Concessional debt: \$2.0 million Commercial debt: \$2.0 million (All lenders are <i>pari passu</i> ) Beneficiary funding: ~\$4.3 million
Fixed Return	4% p.a. for commercial lenders with a 50bps commitment fee. 1% p.a. for concessional lenders
Expected Impact	Reduce implementation period from 10 to 4 years. Protect 15,000 acres on and around the Tahoe National Forest from wildfire risk.
Sample Impact Metrics	Water supply protected/made resilient, Direct and Indirect Jobs Created, Prescribed Fire to Reduce Wildfire Risk

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## INTRODUCTION

Healthy forests are vital for clean air, fresh water, and a thriving ecosystem. Forest preservation is key to meet SDG 15 (Life on Land), particularly target 15.1: to ensure the conservation, restoration, and sustainable use of forests.

In California alone, 6-9 million acres of forest land need restoration. Unnaturally dense forests are a primary concern, exposing communities to heightened wildfire risk and severity, diminished and degraded water supplies, and other climate vulnerabilities. To reduce the risks associated with overgrown forests, forest restoration is required. This is achieved through removing excess vegetation (e.g., ecological thinning of small diameter trees) and using controlled burns to restore the natural fire cycle to return forests to a healthier state.

Despite the benefits associated with forest restoration, this work is not being done at the pace or scale required to solve the growing challenge of overgrown forests in the western U.S. To make matters worse, progressively severe and costly wildfires have forced the USDA Forest Service (the Forest Service) to divert funds from prevention (e.g. forest restoration) to fire suppression. The result is a growing financing gap; while an estimated \$60 billion is needed to restore forests within the U.S., the Forest Service had an [annual budget](#) of less than \$500 million allocated to restoration in FY 2019. Public dollars alone cannot address this issue at scale.

Against this backdrop, Blue Forest Conservation launched the pilot Forest Resilience Bond (the Yuba FRB) in 2018. The Yuba FRB is \$4 million in size and located on the Tahoe National Forest in California. The Yuba FRB harnesses upfront investment provided by private investors to cover the initial costs of restoration, with public beneficiaries such as the Forest Service, state agencies and utilities sharing the costs to reimburse investors over time. This case study reviews this innovative blended structure, which benefitted from early-stage development grant funding and concessional investment provided by the Rockefeller Foundation and the Gordon & Betty Moore Foundation, and market rate investment from CSAA Insurance and Calvert Impact Capital. The novel structure of the FRB demonstrates the value of blended finance in crowding in private financing to underfunded sectors such as conservation.

## DESIGN AND FUNDRAISING

While the concept of a restoration bond is not new, Blue Forest is the first to successfully deliver this model to market. The initial impetus for the FRB began when Blue

Forest Conservation – then a team of students at UC Berkeley – won the Kellogg-Morgan Stanley Sustainable Investment Challenge in 2015, a global competition for innovative finance vehicles that seek positive environmental or social impact and competitive financial returns. Recognizing the economic costs of forest fires, Blue Forest sought to develop an innovative financial model that could mobilize additional sources of financing from multiple beneficiaries to fund forest restoration activities, with the aim of reducing the severity and frequency of wildfires. During this time, Blue Forest started developing a strong network, partnering with Encourage Capital, an impact investment firm on the fundraising, financial structuring, and execution of the FRB.

The FRB was launched on the notion that the primary barrier to adequate forest restoration activities was a lack of adequate financing. While forest restoration work is mainly seen as a public good, fiscal budget constraints leading to a lack of timely funding have prevented forest restoration activities from taking place at the scale or speed necessary. Blue Forest recognized an opportunity for private investment to serve as a critical source of upfront, flexible financing for forest restoration, if contracted appropriately. Blue Forest was also aware that there were a variety of beneficiaries who draw economic value from forest restoration efforts, including state agencies, public utilities, and even private companies, who would be willing to reimburse investors over time. This awareness was a critical component in developing the FRB; while earlier models of restoration bonds had relied on one single beneficiary, Blue Forest identified multiple stakeholders who could share the costs of the project.

Blue Forest developed its model by drawing on two types of financing structures: impact bonds and infrastructure financing. Despite its name, the FRB is not a traditional bond, but rather a fixed income vehicle backed by contracted cash flows. Like impact bonds, the FRB was initially conceived as a pay-for-performance vehicle, where private investors provide the upfront capital for the project. In turn, outcome payors – in this case, public beneficiaries – would reimburse investors with a modest return based on the achievement of impact targets. The pay-for-performance component was later removed, with beneficiaries providing contracted project cash flows in an arrangement similar to infrastructure financing.

Given the complexities of the project, Blue Forest needed a comprehensive development team to advance the vehicle to launch. In addition to partnering with Encourage Capital, Blue Forest partnered with the World Resources Institute (WRI), a global research non-profit organization, to conduct the economic analysis needed to attract paying beneficiaries.

Additionally, BFC and WRI worked closely with academic research partners at the University of California Merced’s Sierra Nevada Research Institute and the Natural Capital Project at Stanford University to develop the environmental modeling and analysis.

In 2015, Blue Forest received an early-stage design grant from the Rockefeller Foundation’s newly launched Zero Gap Portfolio. Here, the Rockefeller Foundation was specifically looking for projects that were i) scalable and replicable across a broader market, ii) commercially viable, and iii) creative in their structuring approach. Rockefeller’s funding offered crucial support to Blue Forest as they continued to build out the model and identify investors.

Blue Forest’s next step was to identify two sets of partners: i) beneficiaries who had a financial interest in the water and fire benefits of forest restoration, and who could share in the cost of reimbursing investors over time, and ii) private investors willing to provide upfront capital to finance restoration work.

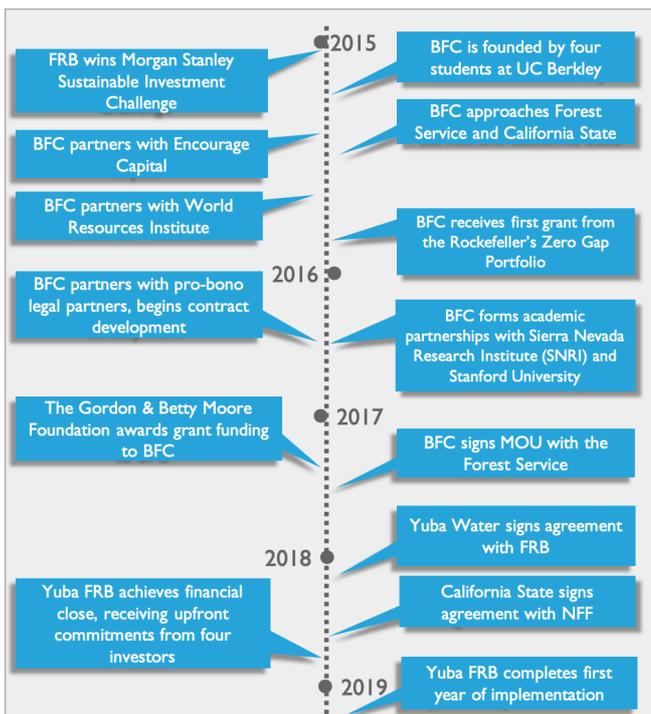


Figure 1: Timeline from concept to launch of Yuba FRB

*Identifying Beneficiaries (Payors)*

Blue Forest first approached the U.S. Forest Service and Sierra Nevada Conservancy, a state agency focused on the region’s environmental well-being. Both agencies recognized the unique opportunity the FRB presented to mobilize additional funding towards forest restoration activities and the potential to accelerate their work. However, investing in the FRB posed a number of challenges, particularly to the Forest Service. Firstly, as a federal agency, the Forest Service

is largely funded by single year appropriations from Congress and was therefore restricted in providing the multi-year reimbursements required for investors over the life of the project. Moreover, the Forest Service was uncertain of how private investment capital might influence the pipeline of restoration projects already selected by the state agency and the nature of treatment. Lastly, while the Forest Service saw value in funding the project, the agency was uncomfortable with their funding being used to repay investors. In addition, the FRB’s pay-for-performance component – whereby payments would be linked to reduced wildfire suppression outcomes resulting from the restoration work – presented a further barrier. The complexities associated with quantifying and measuring avoided fire suppression costs presented inherent challenges to performance-linked payments. Due to these challenges, the Forest Service decided it would not participate in a pay-for-success contract for the Yuba FRB. Nevertheless, the Forest Service did complete all planning activities and contributed both funding and in-kind resources to directly support the implementation of the project. Blue Forest is currently exploring additional approaches for the Forest Service to be a payor in future FRB projects.

This presented a challenge for Blue Forest, given the Forest Service was a critical stakeholder as well as a source of financing for the project. The solution to this issue came through partnering with an implementation partner – in this case, the National Forest Foundation (NFF). As the congressionally chartered philanthropic partner of the Forest Service, NFF brought capacity and implementation expertise that Blue Forest could not. For NFF, leveraging private capital was particularly appealing to mitigate the financial capacity constraint that came with restricted or reimbursable grants. Through the FRB, upfront capital provided by private investors allowed NFF to reduce the implementation period substantially compared to if the Forest Service were to solely implement the project, from 10 to 4 years.

Next, Blue Forest needed to identify a second stakeholder to share in project costs. Here, Blue Forest found a partner in the Yuba Water Agency (YWA), a water utility provider based in Yuba County, California. As a beneficiary of a healthy watershed, YWA recognized the significant benefits that the FRB could bring to protecting and enhancing water supplies. The FRB also represented a timely opportunity for YWA, which was looking to deploy new revenue sources to projects aligned with their mission. Together, Blue Forest and WRI worked with YWA to understand the value of the ecosystem service benefits of the FRB. Findings produced by WRI’s analysis played an important role here, which demonstrated the business case for investing in the

ecosystem benefits as these could provide greater economic value to YWA than the amount of their project contribution. As with the Forest Service, the FRB presented a novel opportunity for the water agency to collaborate with the private sector. Blue Forest created and presented both cost-share and pay-for-performance contracts to YWA. While the process for measuring hydrologic outcomes is well-documented, the added complexity of tying these outcomes to payments introduced an added challenge for YWA. YWA ultimately chose a cost-share contract for the Yuba FRB, with the intent of building data through outcome reporting from the restoration work. YWA will review outcome reports to determine if a pay-for-performance contract will be beneficial in the next FRB. With both YWA and the Forest Service recognizing the value of the FRB in accelerating forest restoration, Blue Forest eliminated the pay-for-performance component of the pilot project early on, at the request of stakeholders.

#### *Contracting with Beneficiaries (Payors)*

Determining the appropriate contracting process with payors was crucial in securing cash flows and monetizing the ecological benefits associated with the FRB, as well as enabling cost-sharing amongst all beneficiaries.

Blue Forest's first challenge was to identify an appropriate contracting process for engaging with the Forest Service. Blue Forest sought an arrangement that would enable reimbursement from Forest Service to the FRB, and allow reimbursements to be extended beyond single year appropriations. Blue Forest worked with its pro-bono legal partners to research Forest Service contracting laws, authorities and agreements. This solution was a stewardship agreement with the NFF. Unlike contracts and other forms of agreements, a stewardship authority allowed the value of products (i.e., merchantable timber) to be used to pay for service work, and enabled the Forest Service to enter into projects for a longer timeframe (20 years, up to 10 years longer than the term of other agreements). The flexible nature of stewardship agreements also meant the agreement could be applied to other National Forest System land, including future project sites. Meanwhile, NFF could serve as the financial intermediary and implementation partner for the Forest Service. In addition to facilitating the financing, this process would relieve the burden on the Forest Service to contract local parties to carry out the restoration work, transferring these activities to the NFF, as well as provide more certainty around project implementation timelines.

Blue Forest works through a cooperative process to set up contracts with individual stakeholders, allowing each payor to codify the terms of its contract or agreements. Given the specific benefits delivered by the FRB to each stakeholder,

this form of contracting allows diverse partners to more easily engage under existing authorities and contribute to restoration activities.

#### *Identifying Investors*

Identifying investors willing to provide upfront capital presented less barriers than identifying and contracting payors. Here, Blue Forest sought to identify two sets of investors: concessional investors willing to take below-market returns to mobilize additional capital and commercial investors looking for good financial performance in addition to impact. Blue Forest found concessional investors in two foundations, both of whom served as initial development funders and were looking to make program-related investments (PRI investments): the Rockefeller Foundation and the Gordon & Betty Moore Foundation.

Blue Forest found a well-aligned institutional investor in CSAA Insurance, an affiliate of AAA. The FRB appealed to CSAA Insurance for several reasons. Firstly, investing in the FRB made good business sense for the insurer, which served thousands of customers living in areas at risk of wildfire. CSAA Insurance saw an opportunity to reduce its risk of insured losses over time. Moreover, the structure of the FRB offered a compelling investment opportunity and a chance to diversify CSAA Insurance's portfolio, especially as future FRBs come to market. Lastly, the FRB aligned with the company's ESG mandate given the obvious environmental benefits of the FRB. CSAA was joined by Calvert Impact Capital, an impact investor and supporter of climate and environmental issues, that was looking to support market-building transactions. Calvert Impact Capital provided additional support to help the FRB become more institutional, including advising Blue Forest on the preparation of key documentation.

## STRUCTURE AND GOVERNANCE

### CAPITAL STRUCTURE

#### *Investors*

The Yuba FRB received \$4.0 million in upfront commitments split evenly amongst four lenders. All lenders rank *pari passu*, and receive principal and interest on a quarterly basis. Concessional investors, including the Rockefeller Foundation and the Gordon & Betty Gordon Moore Foundation, are entitled to an interest rate of 1.0% per annum. Meanwhile, commercial investors, CSAA and Calvert Impact Capital, are each entitled to an interest rate of 4.0% per annum. Market rate lenders may also receive a commitment fee of 0.50%, but from undrawn capital. The investment is structured as an

amortizing loan with a weighted average life of less than 2.5 years for both PRI and market-rate investments.

*Sources of Cash Flows*

The absence of the pay-for-performance component allowed for a simplified payment model. Under its outcome agreement, each beneficiary has individually negotiated its financial commitment with the FRB, totalling more than \$4.3 million in outcome funding. Individual negotiations allowed for each beneficiary to derive value while ensuring full project cost and a modest amount of interest be covered. The sources of funds are as follows:

- **Yuba Water Agency:** \$1.5 million fee for services contract over 5 years
- **California Fire:** \$2.598 million grant (over 3 years) all reimbursable after work is completed
- **Sierra Nevada Conservancy (SNC) grant:** up to \$0.25 million (over 3 years)
- **Forest Service:** in-kind and cash contributions and the value of merchantable timber that arises from the restoration work.

**LEGAL STRUCTURE AND GOVERNANCE**

Blue Forest received significant pro-bono legal support from two firms, Orrick, Herrington & Sutcliffe and Brownstein Hyatt Farber Schreck, to research and develop the appropriate structuring mechanisms permissible for all involved stakeholders.

The FRB involved the formation of a Special Purpose Vehicle (SPV) (FRB Yuba Project I LLC), incorporated as an LLC and a wholly owned subsidiary of Blue Forest (a 501c3 non-profit). The SPV has entered into a joint loan agreement with lenders and passes loan proceeds along to NFF in the form of both 0% interest rate loans and grants. The 0% interest rate loan to NFF provides critical working capital, while ensuring no funds for state or federal partners are used to pay interest, which can violate the statutes of certain grant programs and appropriations. Blue Forest serves as sponsor entity for this project and the SPV is bankruptcy-remote.

Stakeholders involved in the transaction and their relationship to the SPV are detailed in the following figure:

- **Forest Service and SPV:** Forest Service has no legal connection to the SPV. The only legal relationship is a cooperative agreement to allow NFF to hire contractors and manage implementation. In addition, Forest Service has an existing Master Stewardship Agreement in place with NFF to contribute to the project with revenues from any

merchantable timber generated from restoration activities, as well as cash reimbursements.

- **California State Government:** The State has signed reimbursable grant agreements to support this project. First, CAL FIRE’s California Climate investment (CCI) Program provided an award to NFF. Additionally, the Sierra Nevada Conservancy offered a grant to Sierra County to help implement a portion of this project. This grant is not considered part of the overall FRB financing but does support completion of vital Aspen regeneration work.
- **National Forest Foundation (NFF):** NFF serves as the implementation partner as well as the financial intermediary for the California State grant and Forest Service (via cooperative agreements).
- **Yuba Water Agency:** YWA has signed a fee-for-services contract with the SPV to make payments based on completed restoration work adding greater accountability for YWA’s financial participation. Payments will be made over 5 years starting in November 2019.

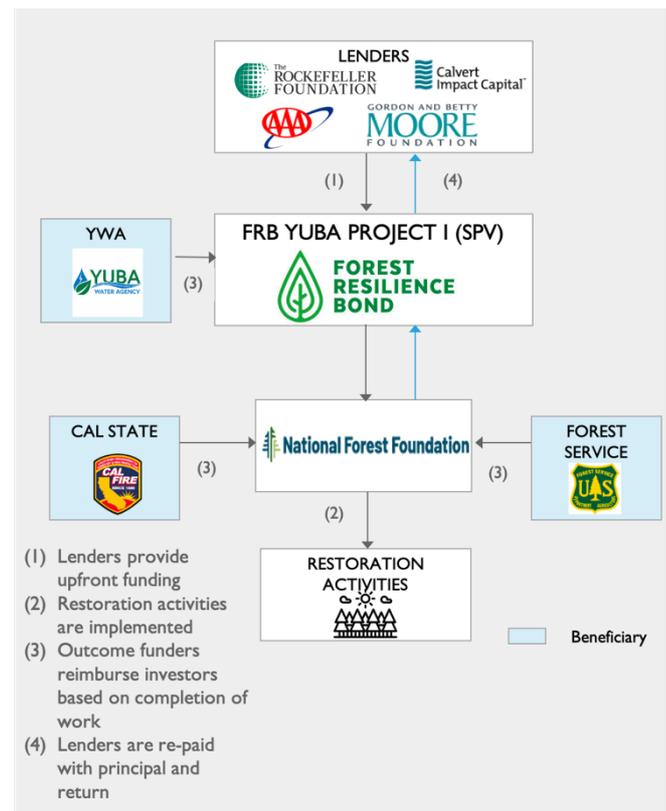


Figure 2: Structure of Yuba FRB

To ensure conflicts of interest from investors are avoided, Blue Forest identifies the target project in collaboration with Forest Service prior to engaging with investors. Blue Forest does not take commitments of investor capital until this planning is complete. In addition, FRB provides funding to NFF to hire local crews and manage the implementation of

on-the-ground restoration work. By using a third party and only working on pre-planned projects, Blue Forest ensures neither beneficiaries nor investors have undue influence on the implementation of restoration treatments which have been prioritized by the Forest Service.

In 2020, following confirmation of tax-exempt status, Blue Forest elected its first Board of Directors, comprising 7 individuals.

## OPERATIONS

### INVESTMENT CRITERIA

Blue Forest prioritizes project sites that have been identified by the Forest Service as ‘high fire risk’ and are approved through the National Environmental Policy Act (NEPA). Blue Forest also assesses the capacity of relevant stakeholders to participate in an FRB and the presence of paying beneficiaries.

### ACTIVITY-TO-DATE

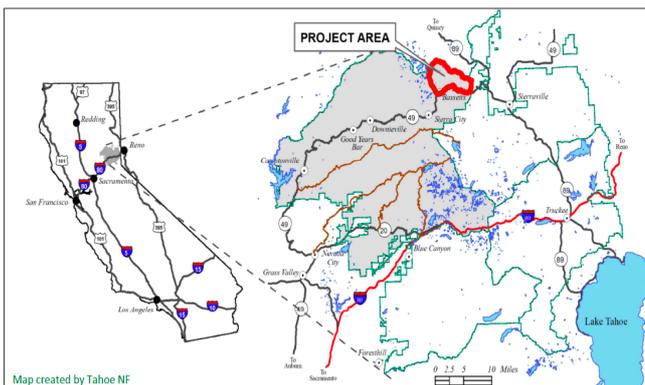


Figure 3: Site of restoration work for the Yuba FRB

The Yuba FRB was launched in the Yuba River Watershed on the Tahoe National Forest in Q4 of 2018. This area has not experienced significant fire in over a century, leading to dense overgrowth that increases the propensity for wildfire and water challenges then exacerbated by a changing climate. Key activities financed by the FRB include mechanical thinning of trees and prescribed burns to reduce forest density as well as meadow and aspen restoration across 15,000 acres on the Tahoe National Forest. Forest restoration activities started in 2019 and are expected to be completed by 2022.

### IMPACT-TO-DATE AND ANTICIPATED IMPACT

The Yuba FRB is expected to yield considerable environmental benefits through reducing the incidence of

large damaging forest fires and acknowledging the co-benefits of restoration such as protected water quality, improved water quantity, carbon sequestration, and rural job creation and community resilience.

- **Fire Risk Reduction:** The planned restoration treatments will increase the resilience of the landscape to the risk of fire and decrease the probability of high-severity wildfire. In addition to the environmental devastation caused by large-scale fires, the FRB will reduce the significant costs associated with fire suppression.
- **Water Quality and Sedimentation:** By reducing the risk of severe wildfires, forest restoration helps protect water quality and prevents sedimentation and woody debris from accumulating in water supplies.
- **Additional Water Quantity:** The planned treatments for the Yuba Project financed through the FRB will lead to reductions in forest water use, translating directly to increases in streamflow. It is estimated that restoration treatments will generate enough water for the Yuba Water Agency to serve the equivalent of 1,700-2,400 households in the first year alone, while also generating additional hydropower revenue.
- **Reduced Flood Risk and Damage to Infrastructure:** Severe wildfires increase the risk of floods and subsequent infrastructure damage. Restoration projects, such as the work planned in the Yuba can reduce the impact of these incidences and resulting costs.
- **Carbon Sequestration and Avoided Emissions:** By decreasing the risk of severe fire, forest restoration avoids the associated carbon and air pollution emissions and protects the forest’s ability to continue sequestering carbon.
- **Rural Community Development:** The restoration work supported by the FRB will support direct and indirect job creation. With long-term restoration planning, restoration offers a source of stable employment that contributes to the economic resilience of local communities.

Beyond these direct benefits, the FRB addresses inherent constraints faced by the Forest Service and other public agencies that prevent restoration efforts being completed at the scale or speed required. By leveraging upfront private investments, the FRB can implement restoration work more quickly and with greater flexibility, while providing private investors fixed returns. In addition, the FRB serves as a channel for building relationships between diverse stakeholders to support long-term land management and shared stewardship.

The FRB also provides important demonstration effects for growing investments to advance conservation. Conservation finance is a set of mechanisms for investing in ecosystems to monetize environmental externalities. The aim is to generate more diversified sources of capital for biodiversity conservation. To date, conservation finance represents a small share of the global sustainable finance market: while GSIA estimates that sustainable investment assets stood at [\\$30.7 trillion](#) at the start of 2018, Forest Trends estimates that private investments in conservation totalled much less; [\\$8.2 billion](#) over the period 2005-2015. The blended finance market reflects similar trends. According to the Convergence database, conservation finance represents less than 10% of the value of the blended finance market, accounting for [\\$3.1 billion](#) in aggregate financing to date.

By adopting a blended structure, including the provision of concessional capital from upfront investors, the FRB is introducing financially attractive opportunities for private investors, particularly institutional investors looking to diversify their investments, reduce risk, and create positive impact.

### IMPACT METRICS

Yuba Impact 2019				
SDG Target	Project Outcome	Unit	Planned Total	2019 Progress
6	Clean Water & Sanitation			
	Water supply protected/made resilient	Acre-feet	50,000	7,400
7	Affordable & Clean Energy			
	Renewable Energy Generated by Biomass Utilization	MWh	15,750	-
	Hydropower Generated	MWh	69,340	10,250
8	Decent Work & Economic Growth			
	Direct & Indirect Jobs Created	#	79	17
	Total Funds Invested in Ecosystem Restoration	\$	\$4,000,000	\$875,000
11	Sustainable Cities & Communities			
	Communities Involved in Resilience Bonds	#	4	4
13	Climate Action			
	Road Work	Miles	5	4
	Thinning to Reduce Wildfire Risk	Acres	1,630	625
	Prescribed Fire to Reduce Wildfire Risk	Acres	2,510	-
15	Life on Land			
	Avoided Wildfire Carbon Emissions	MT CO2e	49,450	7,300
	Terrestrial Ecosystems Restored	Acres	4,849	717
	Terrestrial Ecosystems Protected	Acres	14,545	2,151
	Biomass Utilization	Tons	35,000	13,750
	Aspen Regeneration	Acres	225	92
17	Partnerships for the Goals			
	Meadow Restoration	Acres	395	-
	Invasive Plant Treatments	Acres	89	-
	Formal Blue Forest FRB Partners	#	18	18

Figure 4: SDG alignment and impact of the Yuba FRB to date (Sourced from [FRB Annual Impact Report 2019](#))

In 2020, Blue Forest released its inaugural Forest Resilience Bond Impact Report. This report captures project outcomes aligned to the following Sustainable Development Goals (SDGs): Goal 6 (Clean Water & Sanitation), Goal 7 (Affordable & Clean Energy), Goal 8 (Decent Work & Economic Growth), Goal 11 (Sustainable Cities & Communities), Goal 13 (Climate Action), Goal 15 (Life on Land), and Goal 17 (Partnerships for the Goals). Table 1 highlights these metrics and outcomes achieved to date:

## FOLLOW-ON STRUCTURE

The current \$4.0 million FRB Yuba project serves as a pilot for Blue Forest, allowing the organization to demonstrate its commercial viability and ability to accelerate the pace of ecological work. Given the scale of ecological need and the larger size of investment sought by institutional investors, Blue Forest intends to scale the FRB to fund projects in the \$10-\$25 million range, as well as aggregate smaller projects into a fund. In addition to gaining traction with institutional investors, a larger project size allows for larger areas of restoration work, while decreasing transaction costs. As Blue Forest seeks to scale the FRB model, it anticipates shifting towards purely commercial rate capital from investors. Blue Forest is currently developing its project pipeline with eight National Forests across the western U.S.

The FRB provides a replicable, multi-stakeholder financing model that can be applied to many environmental problems in both developing and developed contexts. At its core, two central stakeholders are required to replicate the FRB: investors willing to provide upfront financing for ecological intervention, and payors who are willing and able to share the cost of reimbursing investors over time. Further complexities involve adapting the contracting processes to suit the different regulatory environments present in other countries.

While there have been limited interventions in developing countries to date, the Cloud Forest Blue Energy Mechanism provides one example of how a model like the FRB could operate in a developing country. Developed by Conservation International and The Nature Conservancy, Cloud Forest Blue Energy is a pay-for-performance pilot in Latin America that leverages upfront funding from hydropower plants, who rely on cloud forests for clean water, to fund conservation efforts. Although the project is still in the development phase, such models reveal the potential of mechanisms such as the FRB to address sustainable forestry practices in less developed regions.

## KEY INSIGHTS

- A patient project sponsor is crucial to the success of innovative and bespoke blended finance models such as the FRB: The success of the FRB is in large part due to the strong leadership role played by Blue Forest. As project sponsor, Blue Forest worked for over 3 years alongside its partners, including the WRI and other academic researchers, to develop the economic analysis needed to make the project viable for beneficiaries and investors. Early stage grant funding from the Rockefeller

Foundation and the Gordon and Betty Moore Foundation allowed Blue Forest and partners to develop a business model and engage with stakeholders over this period. Blue Forest spent a significant amount of time and effort coordinating between diverse stakeholders across the private and public sectors, including public agencies such as Yuba Water Agency and the Forest Service, who had never collaborated with private investors previously. To this end, it took over 18 months to determine a contracting process to meet the individual requirements of private investors, foundations, and government agencies. Project sponsors should be aware of the amount of time and effort it takes to bring new and innovative models to market and weigh the costs of innovation versus scaling current models.

- Pilot transactions are time-intensive and costly – but can play an “ice-breaker” role in the market:** The Yuba FRB was set up with the intention of creating a replicable model for the market. As the first transaction of its kind, the FRB has borne significant cost and time to raise \$4 million in financing to fund a project size of 15,000 acres. While this is a relatively small investment size for commercial investors and will finance only a fraction of needed restoration work, the true value of the FRB will ultimately be proven by its ability to scale up pilot projects to a size that can attract commercial financing at scale. Blue Forest is currently developing project pipeline with eight other National Forests, highlighting this icebreaker effect.
- Pay-for-performance metrics are not always appropriate or necessary:** Pay-for-performance metrics can be useful incentives in blended finance transactions, particularly for public and philanthropic funders who are first and foremost looking to achieve impact. Pay-for-performance incentives should only be used if they are sufficiently grounded in data and do not create excessive complexity for stakeholders. In the case of the Yuba FRB, the partners were uninterested or unable to participate in pay-for-performance contracting. Moreover, beneficiaries found sufficient value in Yuba FRB’s ability to accelerate the scale and pace of restoration work that could be achieved due to the availability of upfront funding. Investors and project sponsors alike should determine the pros and cons of including pay-for-performance mechanisms in blended vehicles based on the specific context of the transaction.
- Concessional capital providers do not need to be subordinate to be catalytic:** In the case of FRB, the Rockefeller Foundation and the Moore Foundation accepted a lower rate of return (1%) while staying *pari passu*. This reduced return allowed beneficiaries to limit the required payments while providing an appropriate return (4%) for commercially-oriented investors such as CSAA. The reduced return also unlocked more funding towards project financing by Blue Forest. Ultimately, the proportion of concessional capital and its terms should be right-sized to the specific market and context.
- Blended finance can pave the way for public agencies to find innovative ways to finance projects:** the Yuba FRB marked the first case where public beneficiaries such as Forest Service and YWA have participated in a multi-stakeholder model such as the FRB to leverage private investments towards their projects. Following their participation in the FRB, the Forest Service, YWA along with seven other organizations signed an MOU to form the North Yuba Forest Partnership to initiate landscape restoration across the Yuba River Watershed, which will be financed by multiple future FRBs. In addition, since the launch of the FRB, the Forest Service set up a grant program called Innovative Finance for National Forests (IFNF) to lend grant support to Forest Service partners to develop and implement innovative finance models that leverage investment capital to support National Forest System resilience (the inaugural IFNF [awarded](#) a \$495k grant to expand the FRB). In addition to mobilizing new forms of private capital, blended finance can also influence the public sector to play a catalytic role and participate in new forms of financing to benefit its own goals and objectives.
- Blended finance is a valuable structuring tool in developed markets:** There is a significant need for additional capital to address SDG-aligned sectors such as conservation finance in developed countries. Blended finance can be a useful tool for crowding in additional capital for under-financed sectors and innovative and bespoke vehicles. The FRB benefited from multiple sources of concessional capital, including early-stage funding from philanthropic organizations, as well as concessional PRI investments to create an acceptable risk-return profile for institutional investors. Blended finance is a flexible structuring approach that should be considered across developed and developing markets in order to achieve the SDGs.

## SOURCES

Interviews with Blue Forest Conservation, CSAA Insurance, the Environmental Protection Agency (EPA), National Forest Foundation, Rockefeller Foundation, USDA Forest Service, and the Yuba Water Agency.

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## ABOUT CONVERGENCE

CONVERGENCE is the global network for blended finance. We generate blended finance data, intelligence, and deal flow to increase private sector investment in developing countries.

BLENDED FINANCE uses catalytic capital from public or philanthropic sources to scale up private sector investment in emerging markets to realize the SDGs.

Our GLOBAL MEMBERSHIP includes public, private, and philanthropic investors as well as sponsors of transactions and funds. We offer this community a curated, online platform to connect with each other on blended finance transactions in progress, as well as exclusive access to original market intelligence and knowledge products such as case studies, reports, trainings, and webinars. To accelerate advances in the field, Convergence also provides grants for the design of vehicles that could attract private capital to global development at scale.

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