Case Study

The Yuba Project Forest Resilience Bond

PROBLEM

Healthy forests are one critical resource for mitigating the catastrophic effects of ecosystem degradation and climate change. Not only do forests sequester and store massive amounts of carbon but they also improve water and air quality, provide habitat for wildlife, and improve human health and wellbeing. As a result of a long history of fire suppression in the U.S. which led to overly dense forest stands, logging of fire-resilient trees, and overall decreased forest resiliency exacerbated by climate change, many forests are not healthy. This degraded state puts communities, infrastructure, watersheds, and carbon at significant risk. Forest restoration is necessary to mitigate the immediate risks of wildfire destruction, enhance carbon stability, and meet international climate goals. However, organizations like the US Forest Service (USFS) don't have sufficient funding nor staffing to carry out this work at the scale and pace that's needed to restore forests.

The 313,000-acre North Yuba Landscape watershed is one of the largest contiguous unburned areas in the Sierra Nevada Mountains and is an important water source for surrounding agricultural and residential areas. However, this area also faces a significant and immediate threat of devastating wildfire due to multiple factors including the unhealthy and overgrown nature of the forested land.

SOLUTION

Blue Forest developed a $4 million USD project that focuses on 7,000 acres of forest restoration, protecting 15,000 acres of National Forest System land to help enhance ecosystem health and mitigate numerous risks within the Yuba landscape.

The restoration activities, such as prescribed burns of undergrowth, mechanical thinning of dense tree stands, and restoring degraded meadow ecosystems, greatly improve forest health and resilience while decreasing the risk of destructive wildfires.

OUTCOMES AND COBENEFITS

- Reduced risk of wildfire destruction to local communities, infrastructure, and wildlife habitat
- Protected water quality and enhanced water quantity for consumption, irrigation, and hydropower generation, benefitting the local water utility
- Maintained or potentially increased human physical and psychological wellbeing via reduced exposure to wildfire smoke and enhanced recreational value
- Reduced risk of carbon emissions from severe wildfires
- Sustainably sourced commercial lumber products from strategic forest thinning
- Improved resilience and adaptive capacity of forest ecosystems while improving habitat quality for wildlife

FINANCIAL MECHANISM

Blue Forest has created the Forest Resilience Bond (FRB), a financial mechanism that mobilizes private capital to complement existing public funding to finance ecological restoration of public lands. The FRB brings together stakeholders such as the USFS, water utilities, and state agencies who benefit from more resilient forests, and as these benefits are realized, who share the cost of reimbursing investors over time. This financial model allows for an acceleration of pace and an increase in scale of restoration projects on public lands.

The Yuba I FRB involves the following stakeholders for funding, financing, and implementation:

- Funding: USFS, Yuba Water Agency (Yuba Water), California's Department of Forestry and Fire Protection (CAL FIRE)
- Financing: Private impact-focused investors
- Implementation: National Forest Foundation (NFF)

The collaboration amongst Blue Forest and the above stakeholders is facilitated through the Yuba I FRB LLC, which operates as a Special Purpose Vehicle (SPV) and serves as the debt issuer to mitigate financial risks of the involved stakeholders. In the case of the Yuba I FRB, Yuba Water, the water agency, was the primary beneficiary of the downstream benefits of the forest restoration work. Yuba Water contractually committed to an annual payment of $300,000 over a five-year period to help repay investors over time.

This pilot project, launched in 2018, was then scaled to the Yuba II FRB, a $25 million project restoring 28,000 acres to protect 48,000 acres of forest. Additionally, in 2022, the USFS selected a continuation of this project as a top ten priority landscape project as part of the 10-year US Wildfire Crisis Strategy, providing $25.5 million in funding through 2024.

FINANCING SOURCE

The Yuba I FRB was funded by two primary sources: $2.6 million in public funding came from CAL FIRE, which manages and administers the State of California's Climate Investment grant program, which is funded by the California Greenhouse Gas Reduction Fund; and $1.5 million came from Yuba Water.

The $4 million private financing came from private investors, whose motivations are outlined below:

1) Calvert Impact Capital: Motivated as impact investors where the FRB investment vehicle provides a sufficient social market return
2) CSAA Insurance Group: Recognizes that private capital investment in forest restoration could reduce insurance liability risks to its property and casualty insured product lines over time
3) The Rockefeller Foundation and The Gordon and Betty Moore Foundation aimed to support innovative models that have promise to scale and thrive without ongoing foundation support

REPAYMENT SOURCE

Beneficiaries of forest restoration work contractually agree to repay investors over time. The total amount of repayment includes interest and fees.

FINANCING SOURCE	REPAYMENT SOURCE
The Forest Resilience Bond, which is a combination of private and public funding	Beneficiaries of the forest restoration work contractually agree to repay investors over time

ROLE OF A GREEN BANK OR COMMUNITY LENDER

As the project sponsor and investment developer, Blue Forest facilitated the establishment of the Yuba I FRB by bridging the investment gap for environmental conservation. The primary goal of securing upfront private capital is to accelerate and scale forest restoration in the North Yuba Landscape watershed in a way that public funding alone could not support. In future similar projects, a green bank could play a similar role to that of Blue Forest by connecting various streams of private investment and applying them to a viable forest restoration project.

"READINESS" LEVEL

NFF began implementation of the Yuba Project in 2019 and expects to complete implementation in 2023.

MORE INFORMATION

To find other case studies and more information about financing nature-based solutions go to our website here:
https://nicholasinstitute.duke.edu/project/green-banks-and-community-lenders-financing-nature-based-solutions

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National forest foundation interactive story map on the Yuba Project

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https://www.yubaforest.org/

CASE STUDY CITATION

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