



The Forest Resilience Bond deploys private capital to mitigate wildfire risk and enhance water security by restoring forest health. The Forest Resilience Bond creates value for a diverse set of stakeholders while addressing critical challenges in the Western U.S. by contracting with public and private beneficiaries to monetize the multifaceted benefits of forest restoration.

### Crisis: Overgrown Forests

Some forests in the US contain up to 10x as many trees as nature intended<sup>1</sup>, contributing to both wildfire and water challenges.

The USFS itself has called its land “overgrown and unhealthy” and calls for action to “return forests to the way they were historically” yet lacks the funds to do so despite the proven economic, environmental and social benefits of restoration that far outweigh its costs.

#### Severe Wildfire

- 9 of the 10 worst wildfire seasons on record have occurred since 2000, with 2015 the worst ever<sup>2</sup>
- Fire suppression costs growing from 17% to over 50% of US Forest Service (USFS) budget in just 20 years<sup>3</sup>

#### Water Security

- Drought or “abnormally dry conditions” affecting all 11 Western states<sup>4</sup>
- CA hydro generation “substantially below average” during drought, adding \$2.0B of economic costs<sup>5</sup>

## An Integrated Solution – The Forest Resilience Bond (FRB)

**Forest restoration** is proven to address both wildfire and water security challenges. However, **budget and resource limitations** restrict the ability of USFS to accelerate treatments in areas of need.

The FRB utilizes **private capital** to fund the upfront costs of forest restoration while contracting with **multiple beneficiaries** – USFS, water and electric utilities, private water-dependent companies (where applicable), state governments, and potentially insurance companies – to repay investors over time based on benefits received. The FRB is a standalone financial vehicle meaning that **USFS is not required to raise private finance or issue securities**.

### Advantages of the Forest Resilience Bond

1. Sharing of costs (and benefits) reduces aggregate costs to each stakeholder for restoration work;
2. Access to private capital allows for amortization of costs over time, maximizing immediate scale and scope of restoration without stressing budgets;
3. Use of third party implementation partners alleviates USFS contracting and human capital constraints;
4. Acceleration of restoration treatments prevents further overgrowth and future costs to stakeholders while addressing wildfire and water security challenges in a cost-effective way

## Primary Beneficiaries

### US Forest Service



Decreased wildfire severity, protection of wildlife habitat, recreation areas, and ecosystems

### Utilities & Water-Dependent Companies



Protected water quality, increased water quantity and hydropower (in some cases), protected infrastructure

### State Governments



Job creation, public safety, clean air

BENEFITS

CASH FLOWS

Annual contracted cash flows as a % of restoration costs

Annual contracted cash flows as a % of restoration costs and/or pay-for-success cash flows for increased water quantity (when applicable)

Annual contracted cash flows

1. [E&E News](#); 7/8/2015.

2. [National Interagency Fire Center](#), Total Wildland Fires and Acres, 1960-2015.

3. [“The Rising Cost of Fire Operations”](#), 8/2014.

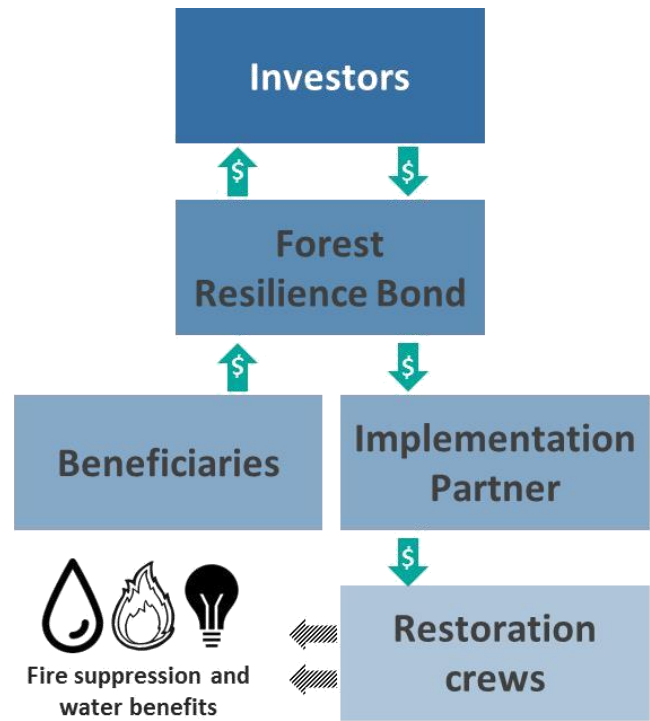
4. [“United States Drought Monitor”](#), 6/2016.

5. [Impacts of California’s Drought: Hydroelectricity Generation 2015 Update](#).

## Mechanics of the Forest Resilience Bond

The FRB accelerates restoration treatments while creating value for beneficiaries through cost sharing and the use of private capital to fund the upfront costs of forest restoration. Funds will flow as follows:

1. Investors provide capital to the FRB investment vehicle to cover 100% of restoration costs.
2. Capital flows to the implementation partner (such as CAL FIRE or National Fish and Wildlife Foundation) as restoration work is completed.
3. Once work is completed, beneficiaries make annual repaid payments to the FRB investment vehicle as benefits are realized over ~10 years.
4. Beneficiary payments pass through FRB investment vehicle to investors. These cash flows provide return of investor principal plus interest.
5. FRB can be reapplied using same/similar contacts for additional treatments when needed.



## Social, Environmental, and Economic Impacts of the Forest Resilience Bond

↓ Wildfires	↑ Water Resources	↑ Hydroelectricity	↑ Employment
<ul style="list-style-type: none"> <li>• Reduced CO2 emissions</li> <li>• Protected habitats, lives, homes, and recreation</li> <li>• Taxpayer savings</li> </ul>	<ul style="list-style-type: none"> <li>• Protected water quality</li> <li>• Increased water yield (in some cases)</li> <li>• Ratepayer savings</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced CO2 emissions</li> <li>• Enhanced water storage capacity</li> <li>• Ratepayer savings</li> </ul>	<ul style="list-style-type: none"> <li>• Safe, sustainable forest restoration jobs</li> <li>• Potential to spur investment in biomass</li> </ul>

## Recent Progress & Next Steps

1H 2016	2H 2016	1H 2017	2H 2017
Select pilot locations	Expand coalition of stakeholders	Develop and implement water quantity measurement platform	Prepare and sign contracts with beneficiaries
	Contract with implementation partners	Conduct due diligence for biomass handling	Engage communities surrounding pilot locations
	Raise capital for pilot transactions	Begin permit process for future deals	Implement pilot(s) and scale

## Forest Resilience Bond Partners



## From Crisis to Opportunity

USFS has identified **58 million acres of restoration backlog**, a number that will only grow if the current trend of fire borrowing continues. The FRB transforms this funding crisis into an investment opportunity by leveraging **private capital** and **aligning incentives** of beneficiaries to repay investors over time. Blue Forest Conservation, World Resources Institute, and Encourage Capital are dedicated to bringing the FRB to market. Our unique approach generates a sustainable pipeline of environmental investments to **accelerate forest restoration** when and where it is needed most.

Visit [www.blueforestconservation.com](http://www.blueforestconservation.com) and email [FRB@blueforestconservation.com](mailto:FRB@blueforestconservation.com) to learn more.