



**FOREST
RESILIENCE
BOND**



Introduction to the Forest Resilience Bond

August 2020



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BLUE  FOREST
CONSERVATION

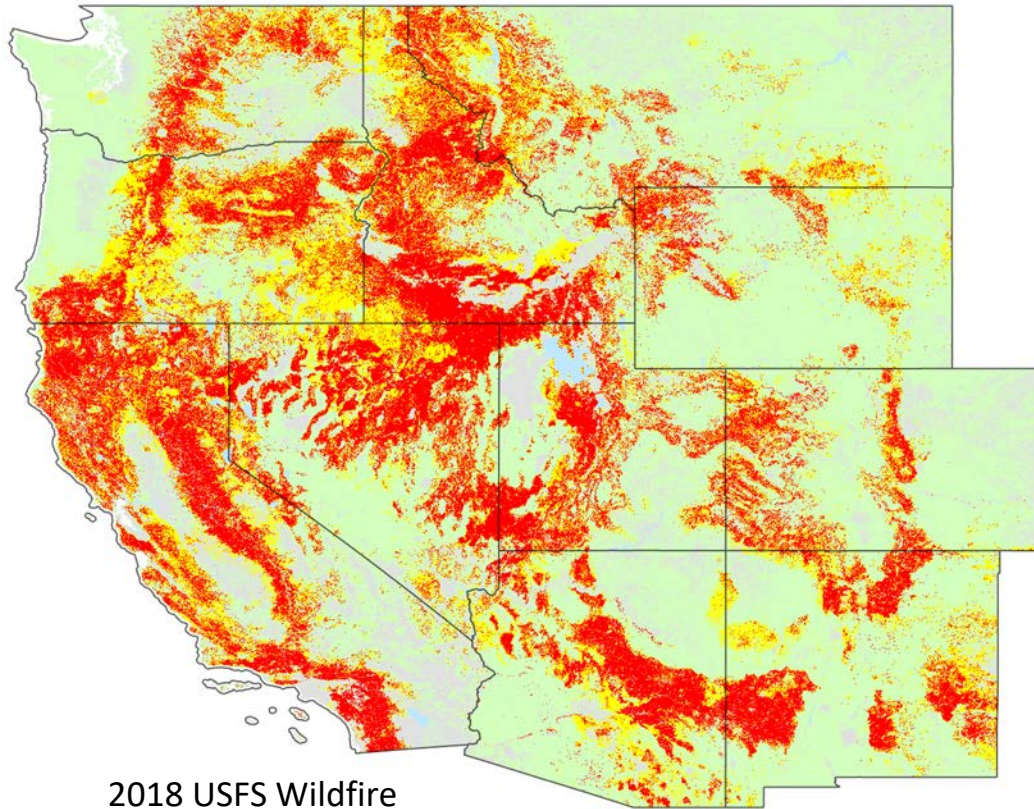
Summary

- ▶ Accelerating pace of wildfires
- ▶ Forest restoration is preventative solution, but lacks funding
- ▶ **Forest Resilience Bonds (FRBs)** = proven public-private partnerships to finance/fund restoration with market-rate returns
 - Decrease risk of severe wildfire
 - Environmental & climate benefits
 - Support & protect rural communities
- ▶ Investors include Rockefeller Foundation, Moore Foundation, Calvert Impact Fund and AAA Insurance
- ▶ Proven partnership with USFS
 - First solution to finance public lands management at scale
- ▶ Robust Pipeline of future projects

West's Biggest Natural Disaster Threat



Western US Forests & Communities at Risk



2018 USFS Wildfire
Hazard Potential

- Low
- Moderate
- High

- ▶ 58M acres at high-medium wildfire risk
- ▶ \$76B-\$130B long term annual wildfire health risk
- ▶ 65% of CA water supply originates in forested watersheds
- ▶ Over \$220B property at extreme risk
- ▶ CA forests becoming net carbon emitters

Path to Overgrown Forests

1890



1993

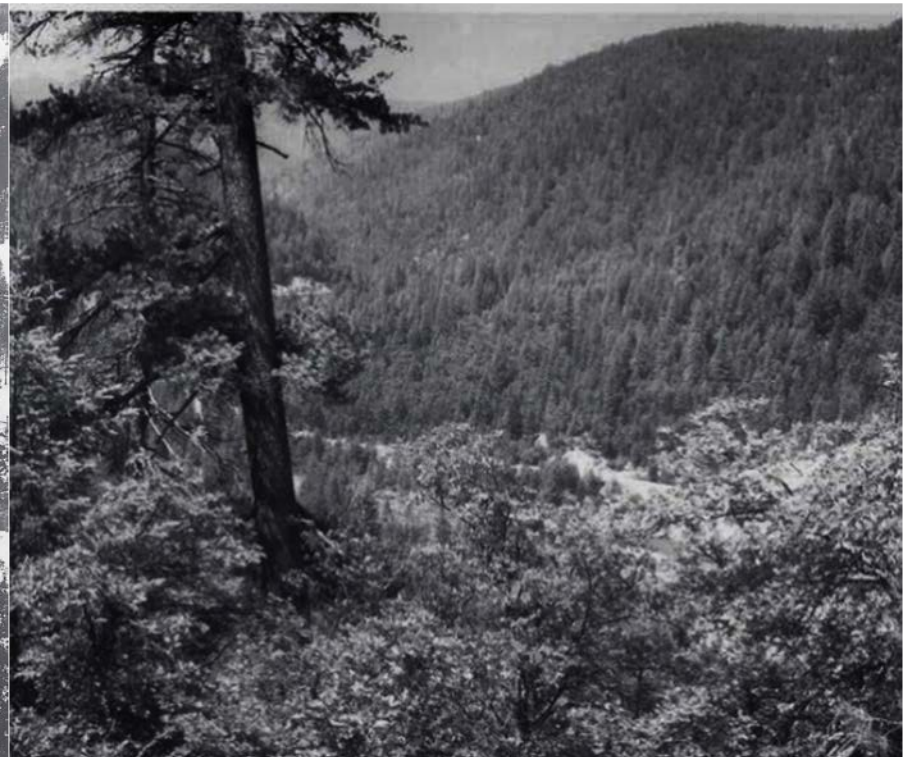


Photo Credit: George E. Gruell, Fires in the Sierra Nevada, 2001

Proven Solution: Forest Restoration



- ▶ Mechanical and hand thinning
- ▶ Prescribed fire
- ▶ Meadow restoration
- ▶ Invasive plant removal
- ▶ Native aspen regeneration
- ▶ Road decommissioning



Less Fuel for Wildfires

Overgrown



Restored



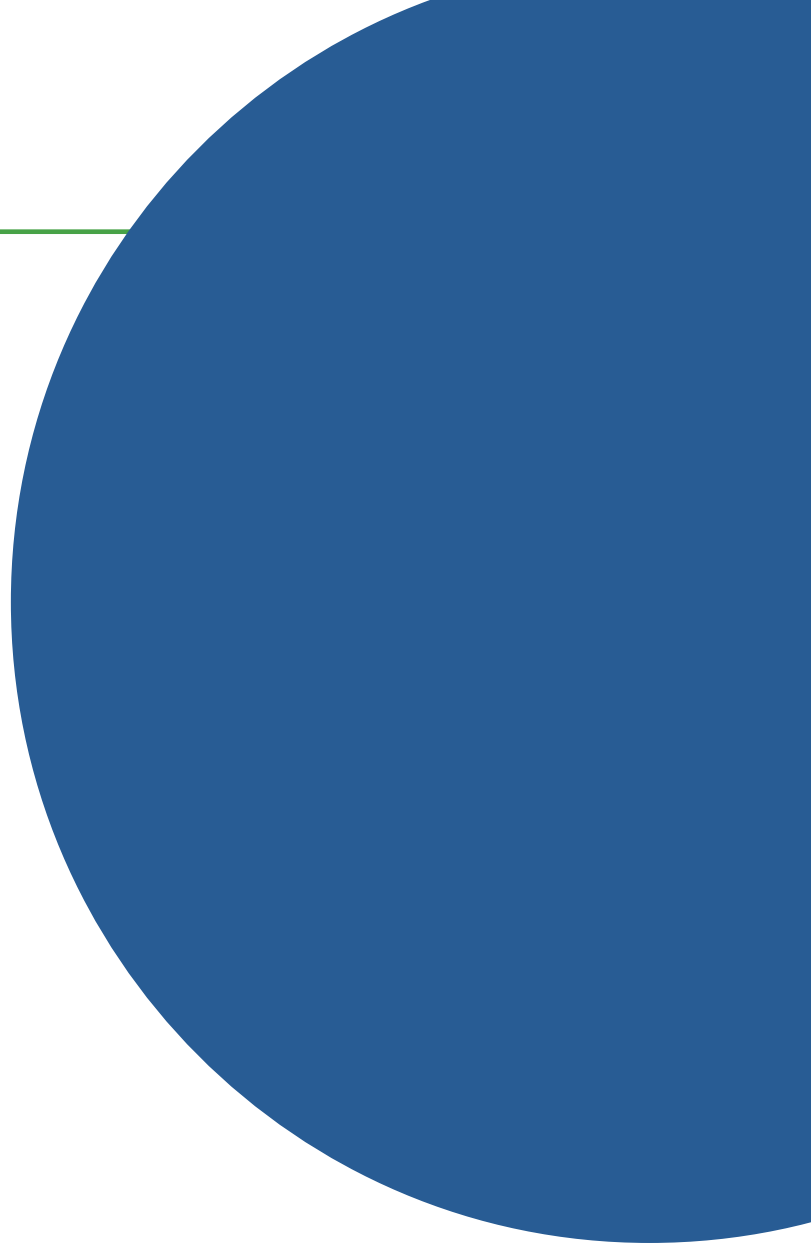
The Finance Problem

USFS 2017
Restoration
Budget¹



\$424
million

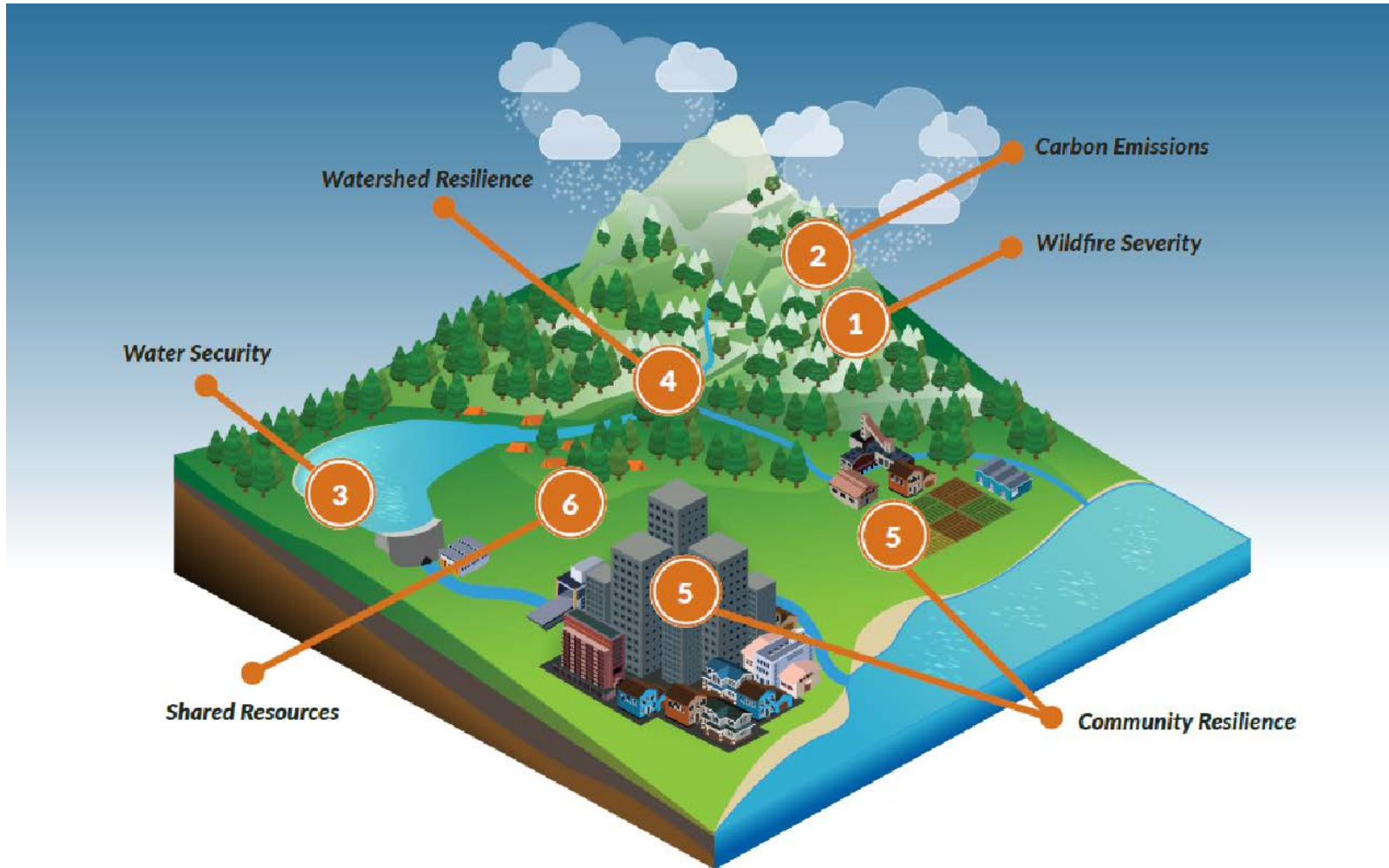
Assuming an industry
average of \$1,000/acre,
the need for restoration on
USFS land is \$58 billion, or
136x current funding



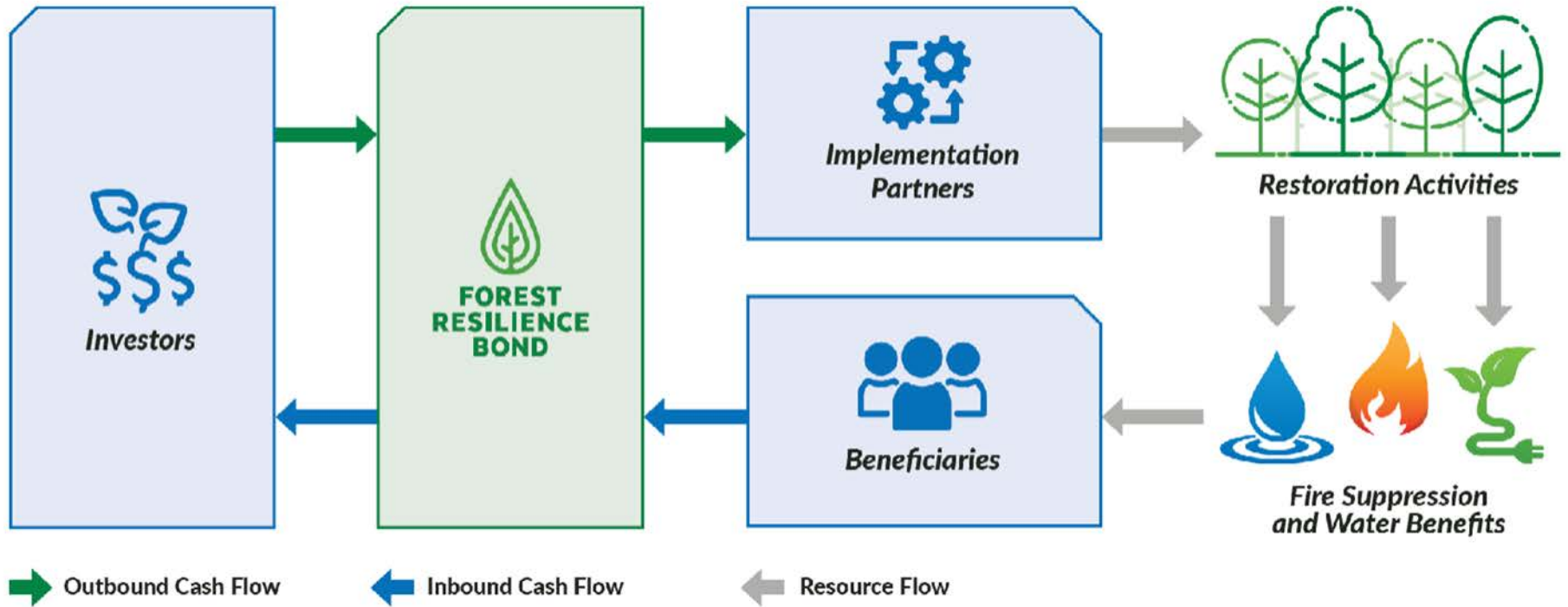
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1. [USFS Fiscal Year 2017 Budget Overview](#) (\$40 million for CFLRP and \$384.1 million for hazardous fuel reduction)
 2. [USFS Fiscal Year 2017 Budget Overview](#) (58 million acres at "high or very high risk of severe fire" @ \$1,000/acre)



Benefits of Restoration

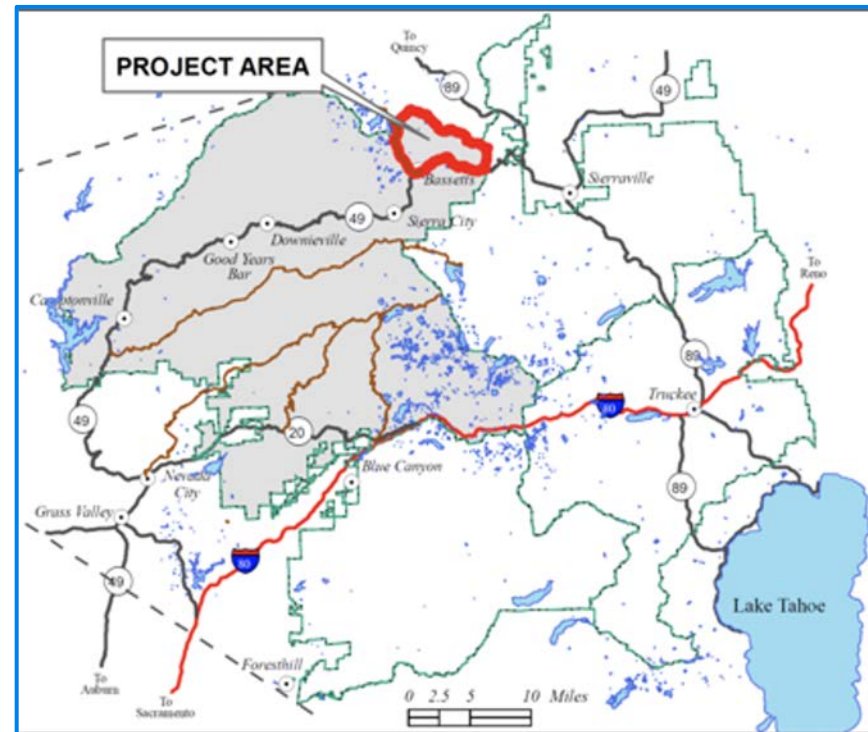


How FRBs Work

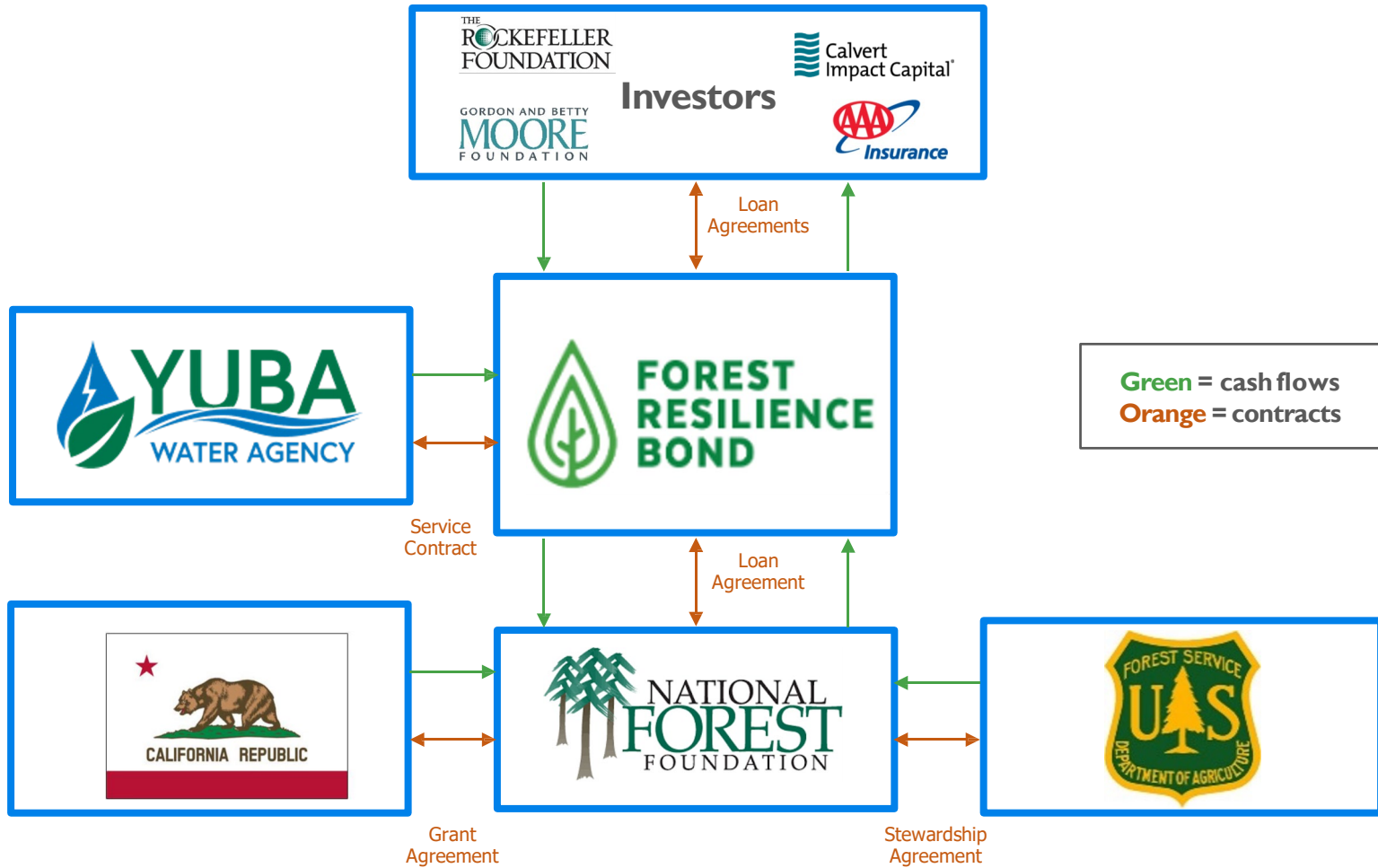


Pilot FRB: Yuba Restoration

- ▶ North Yuba River Watershed, Tahoe NF, California
- ▶ \$4M FRB
- ▶ Restoration work 2019 – 2022
- ▶ Restoring 7,114 acres => protecting 15,000 acres
- ▶ Key partnerships: USFS, CA State and Yuba Water Agency
- ▶ Market rate investors earn 4%, 1% for PRI lenders



Pilot FRB: Structure & Stakeholders



Pilot FRB: Expected Benefits

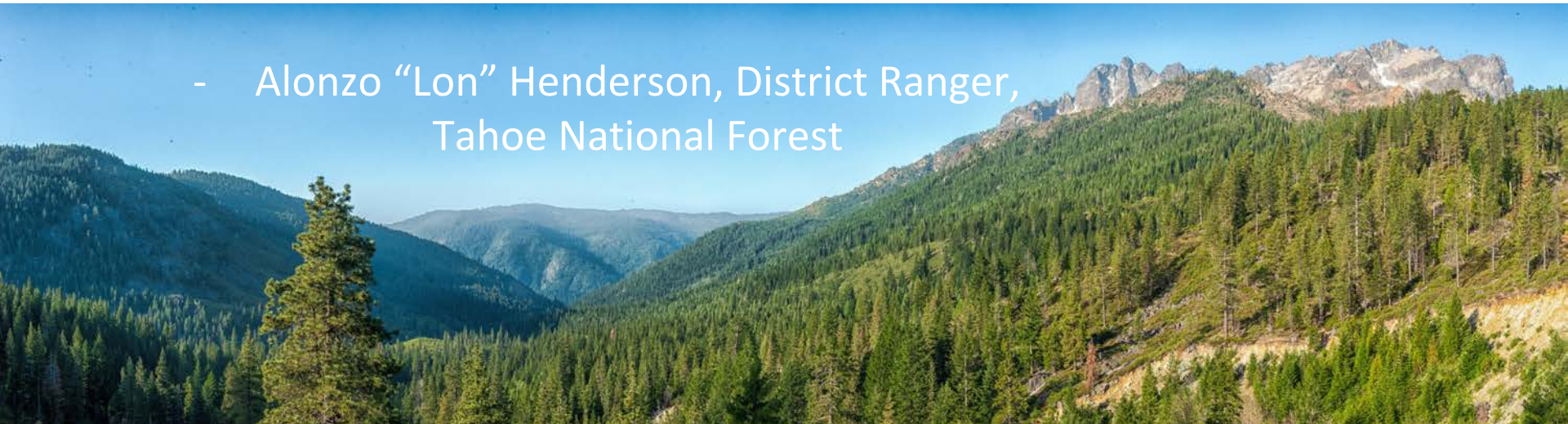
- ▶ Protect 50k acre-feet of water
- ▶ Generate 70k MWh of hydropower
- ▶ Avoid 50k metric tons of CO² emissions
- ▶ Create 79 jobs in local rural communities
- ▶ \$8.8M value to water agency



USFS Testimonial

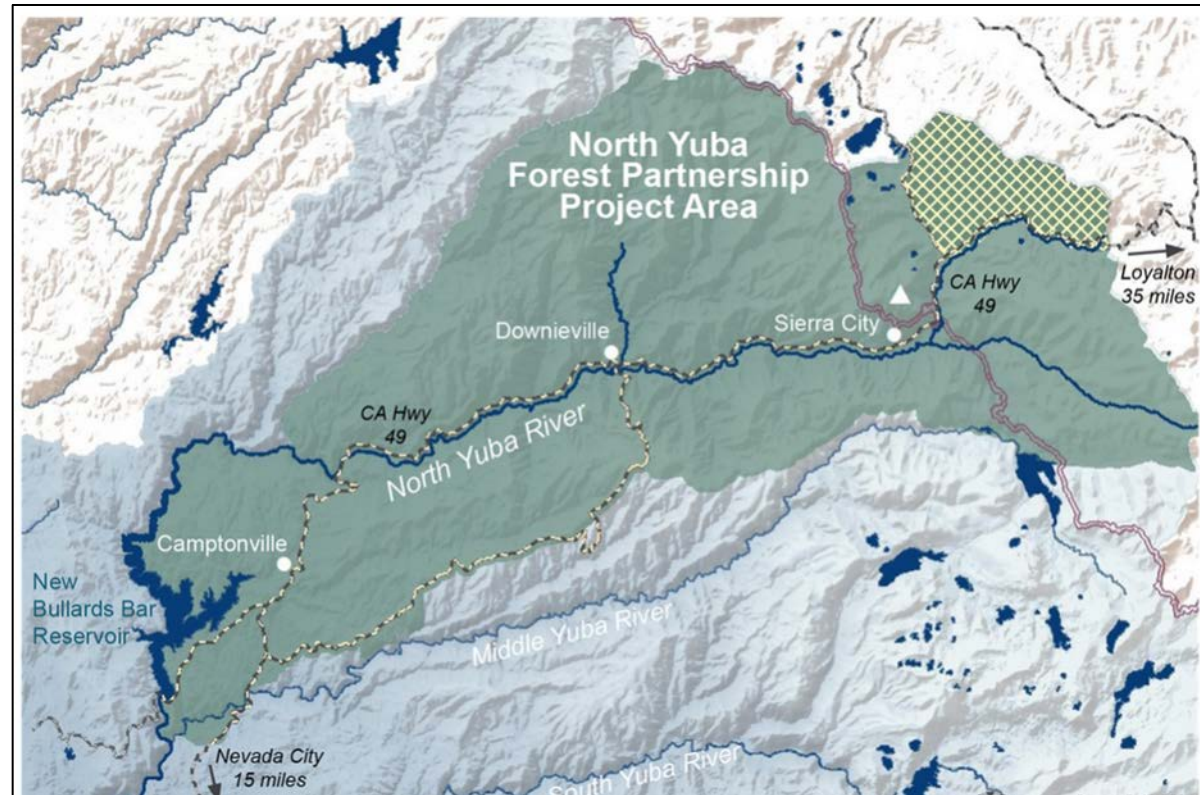
“Typically, a large restoration project such as Yuba would take over ten years, if ever fully implemented. Instead, **we will complete it within three years.** This means a healthier, more resilient forest before insects, disease or wildfire negate our planning and before our communities are adversely impacted.”

- Alonzo “Lon” Henderson, District Ranger,
Tahoe National Forest

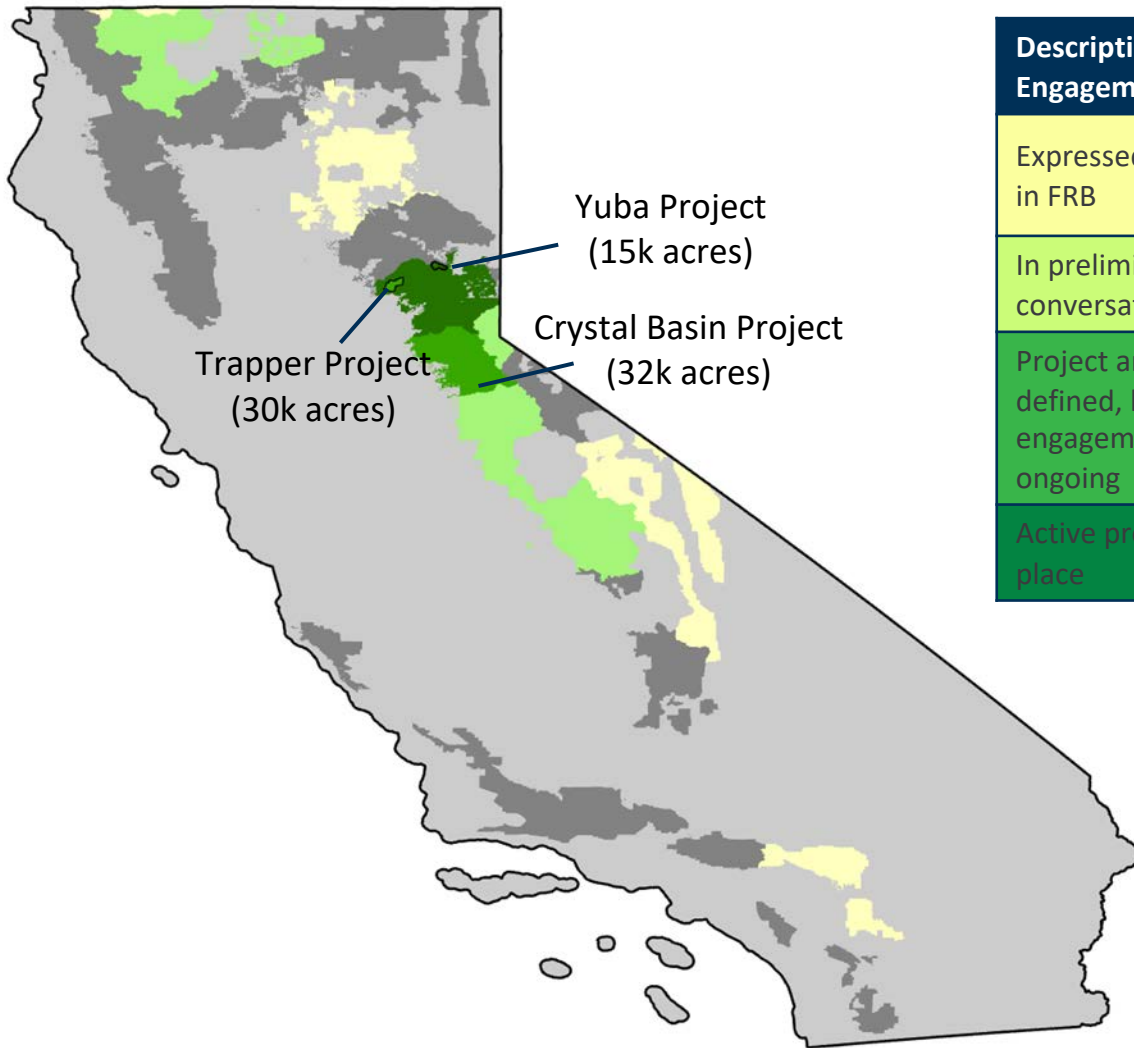


Driving Scaled Investment and Impact

- ▶ Start with initial FRB of \$4M - \$10M
- ▶ Scale to future FRBs of \$100M+
 - Same watershed
 - Same stakeholders
 - Same contracts
- ▶ Cornerstone for sustainable rural development

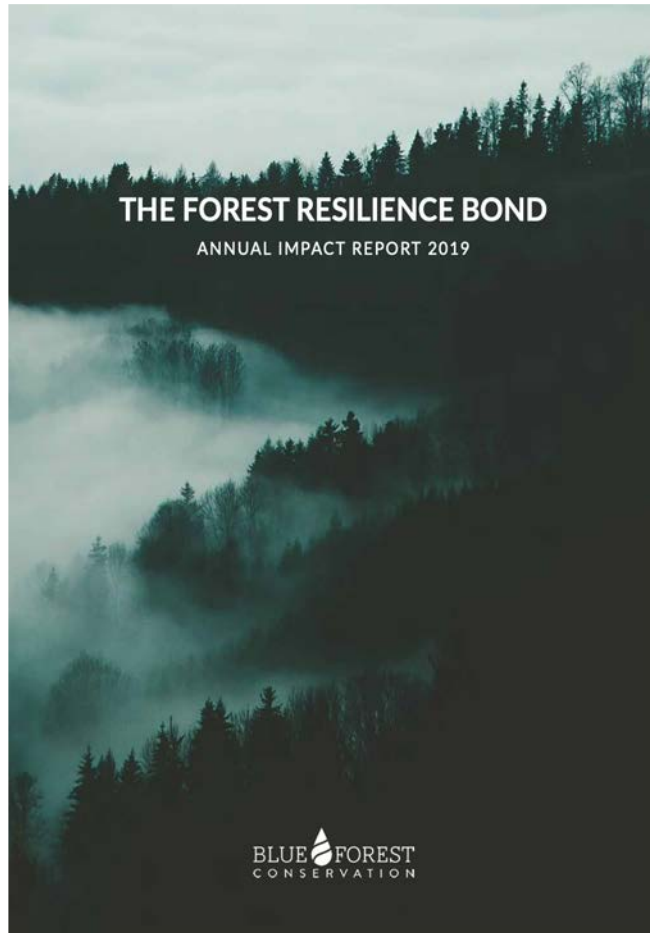


Pipeline California FRB Opportunities



Description of Engagement Level	National Forests
Expressed interest in FRB	Lassen, Inyo, San Bernardino
In preliminary conversations	Klamath, LTMBU, Stanislaus, Sierra
Project area defined, beneficiary engagement ongoing	Eldorado, Tahoe (Trapper Project)
Active project in place	Tahoe (Yuba Project)

Impact Reporting Aligned with SDGs



Key Partnerships Established



Current Investors & Backers



Next Steps + Opportunities

- ▶ Work with COIN (and directly with insurers) to include more insurance investors in future projects/funds
- ▶ Partner with insurance companies on joint research projects to better understand, quantify and ultimately help mitigate wildfire risks
- ▶ Develop new finance products (not insurance products) to allow for insurers to opt in to supporting wildfire risk reduction
- ▶ Federal partners can be hard to work with, especially for the private sector, let us help!



Thank You

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