

Blue Forest & the Forest Resilience Bond

Southern California Water Dialogue
September 2024



Because landscape restoration
needs to happen now



About Blue Forest

Accelerating forest and watershed restoration through conservation finance

Our Areas of Expertise:

- **Science:** Quantifying the environmental and economic benefits of forest and watershed restoration
- **Finance:** Enabling beneficiary commitments to create a 0% line of credit for implementation organizations to alleviate the cashflow challenges associated with reimbursable grants
- **Collaboration:** Supporting community partnerships for long-term natural resource stewardship



Restoring resilience to forests

1890



1993



2021

- CALDOR* AUGUST 2021 218,459 ACRES
- MONUMENT* AUGUST 2021 204,436 ACRES
- MATILAJA SEPTEMBER 1932 220,000 ACRES
- LAGUNA SEPTEMBER 1970 175,425 ACRES
- MARBLE CONE JULY 1977 177,866 ACRES
- CEDAR OCTOBER 2003 273,246 ACRES
- ZACA JULY 2007 240,207 ACRES
- WITCH OCTOBER 2007 197,990 ACRES
- KLAMATH THEATER COMPLEX JUNE 2008 192,038 ACRES
- RUSH AUGUST 2012 271,911 ACRES
- RIM AUGUST 2013 257,314 ACRES
- THOMAS DECEMBER 2017 281,893 ACRES
- MENDOCINO COMPLEX JULY 2018 459,123 ACRES
- CARR JULY 2018 229,651 ACRES
- AUGUST COMPLEX AUGUST 2020 1,032,648 ACRES
- SCU LIGHTNING COMPLEX AUGUST 2020 396,624 ACRES
- INU LIGHTNING COMPLEX AUGUST 2020 343,220 ACRES
- WIRTH COMPLEX AUGUST 2020 18,935 ACRES
- CREEK FIRE SEPTEMBER 2020 9,895 ACRES
- DIXIE* JULY 2021 950,591 ACRES

2020

2000 THROUGH 2019

1932 THROUGH 1999

AL FIRE
CALIFORNIA
SINCE 1989

THE FIRES ARE CONTAINED.
FORMATION WILL LIKELY CHANGE.

NUMBERS CURRENT TO 9/10/21.

> **50%** of acres burned in large CA wildfires over the last 90 years burned in 2020-2022

NUMBERS CURRENT TO 9/10/21.



1926 - Old growth Ponderosa pine stand between Beaver and East Panther Creek in Amador County.

Forest Restoration as a Solution

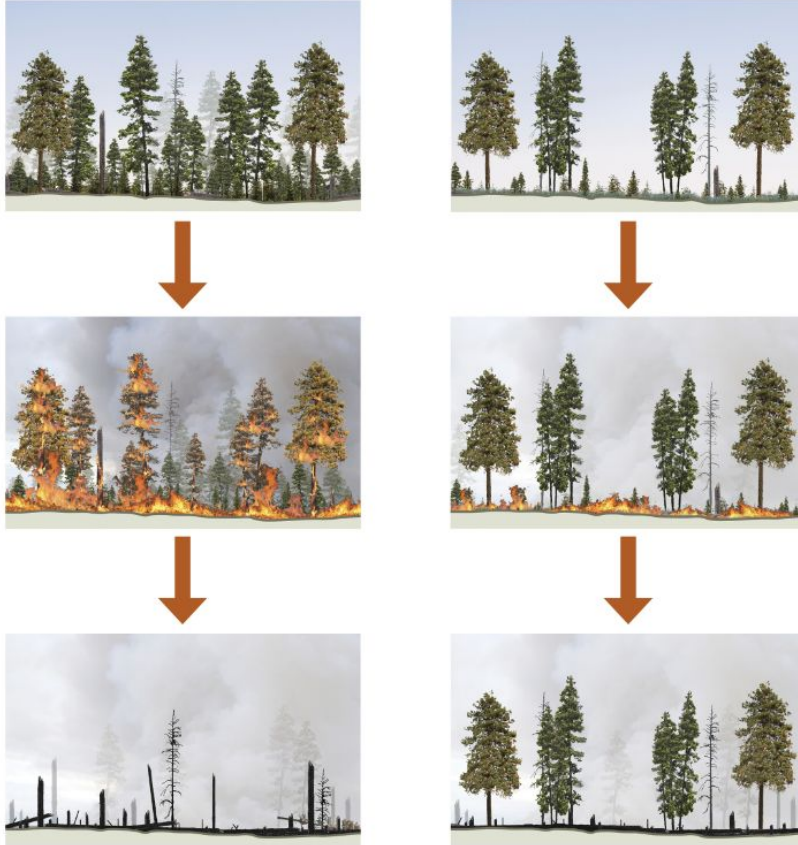
Overgrown



Restored



Background and Motivation



ECOLOGICALLY MANAGED FORESTS By thinning the forest understory, we can safely reintroduce fire as a restorative process. Fire has been excluded from the forest on the left. The forest on the right has undergone Ecological Forest Restoration. © TNC



Background and Motivation



AFTERMATH OF THE BOOTLEG FIRE Ecological Forest Restoration in Action: Aerial photography shows how different treatments moderated the impact of Oregon's 2021 Bootleg Wildfire. © Steve Rondeau, Klamath Tribe

Goals of Conservation Finance



Larger Projects

Non-traditional funding sources → landscape-scale projects



Faster Projects

Streamline project management and contractor payments → quicker implementation



Capacity Building

Promote partnership opportunities, build local capacity, and leverage funds



Extending Infrastructure Finance to Nature



Transportation
Bonds



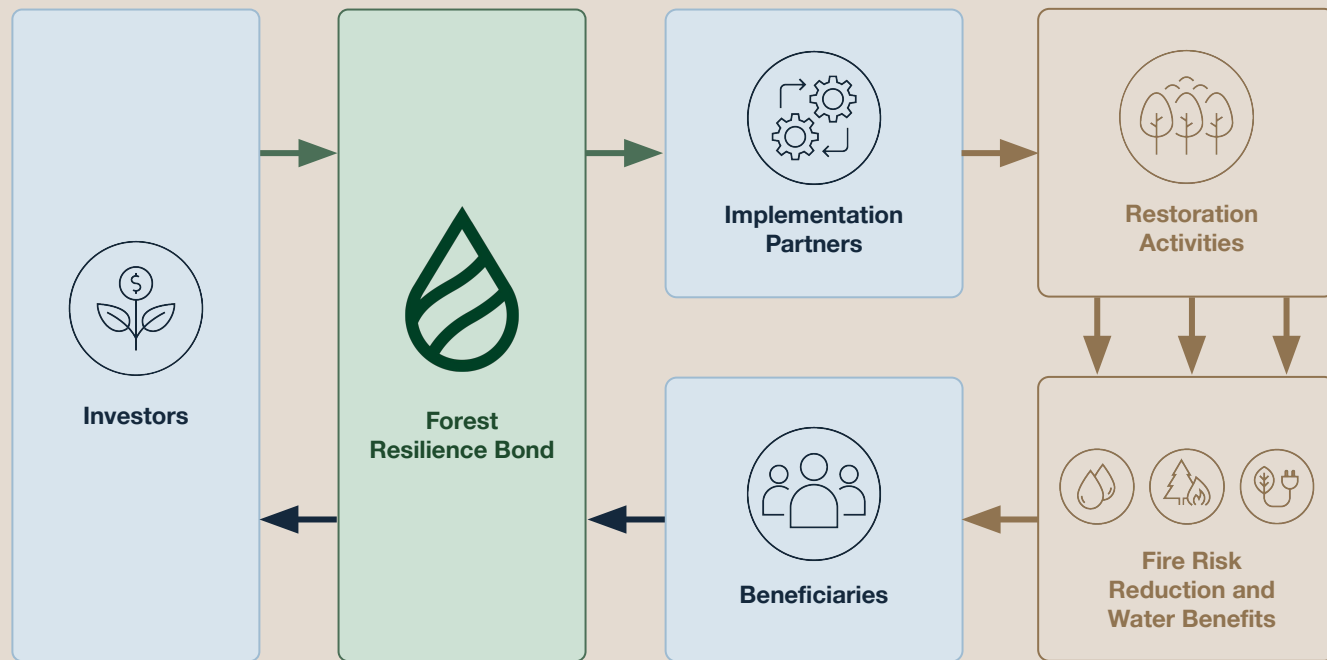
Power
Infrastructure



Water
Treatment

Financing natural infrastructure can resource ecosystem projects with long-term benefits

The Forest Resilience Bond (FRB)

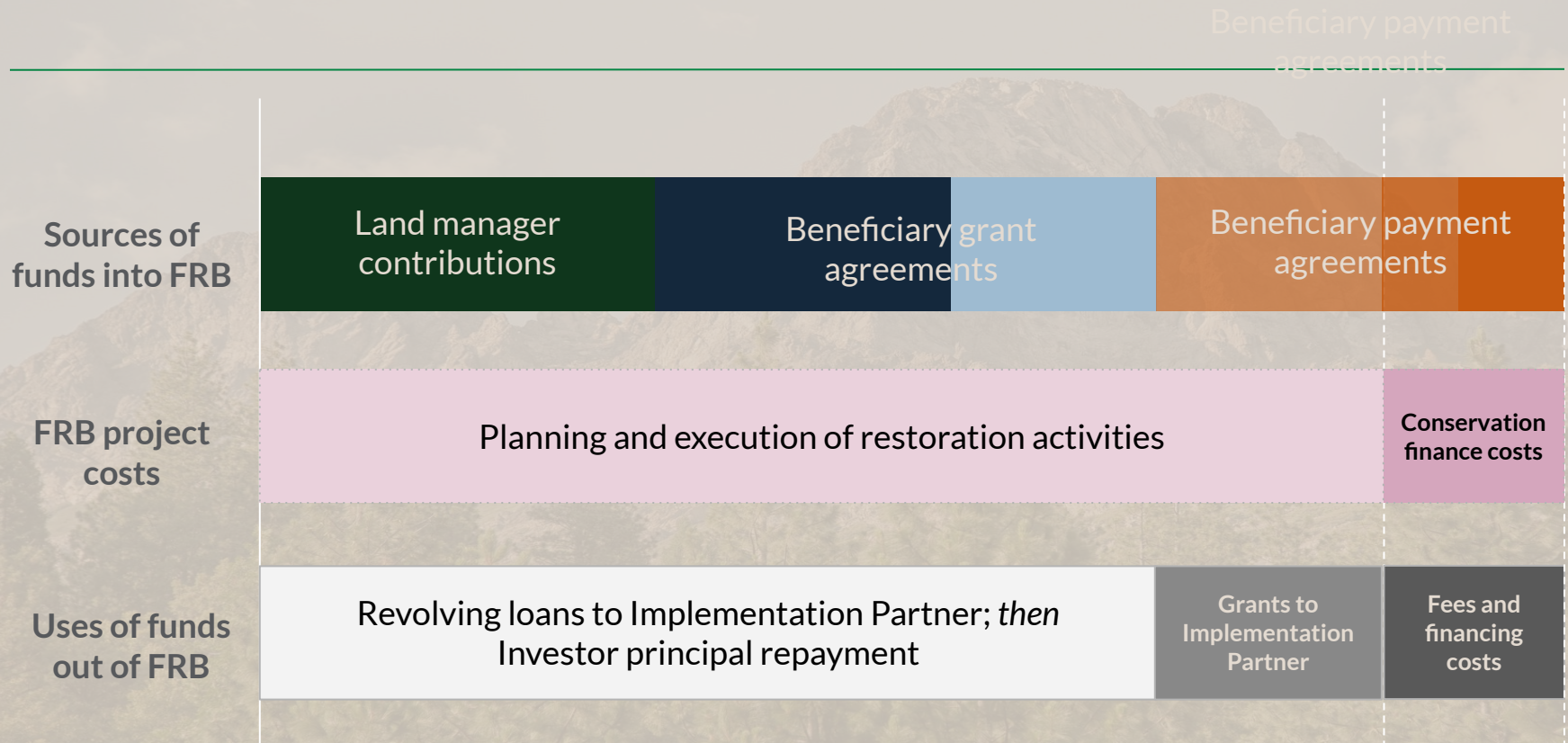


→ Outbound Cash Flow

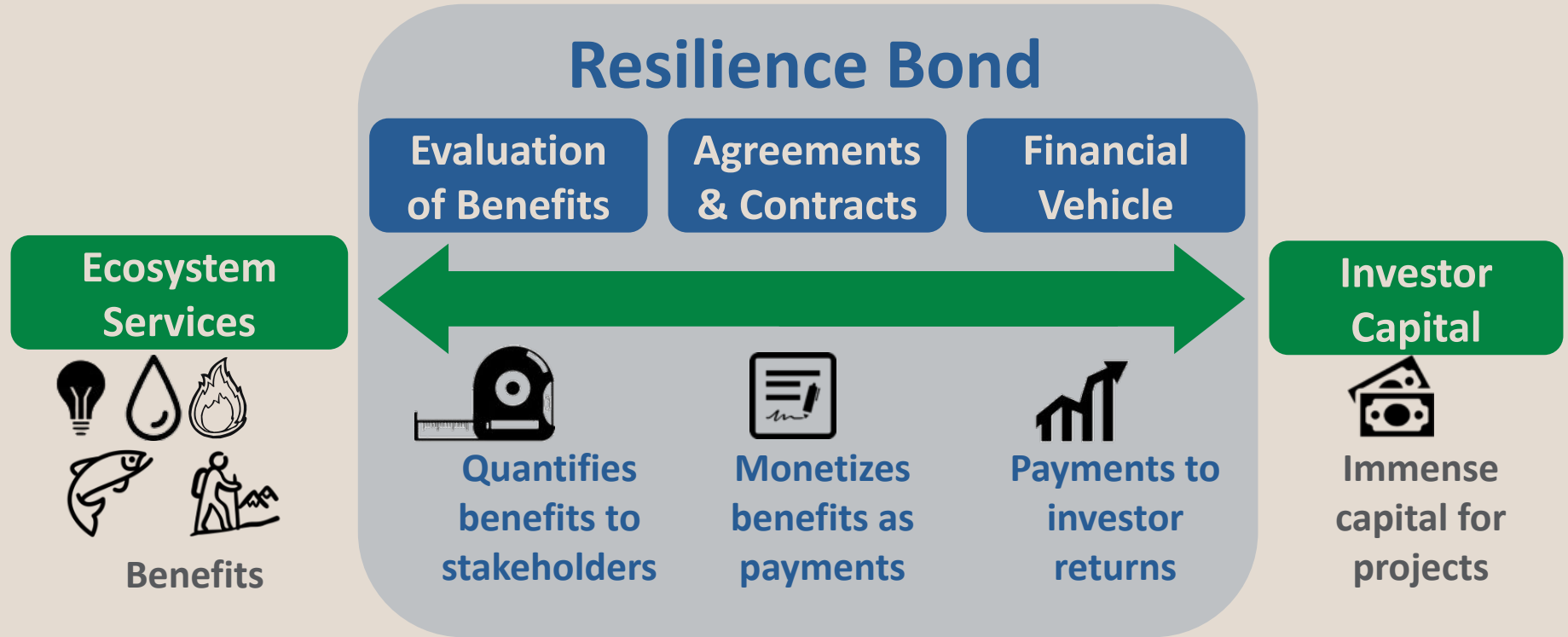
→ Inbound Cash Flow

→ Resource Flow

What Generates the Return?



Connecting Capital to Conservation



Who Are the Beneficiaries, What Are Their Motives?



Utilities (Power, Drinking Water)

Protected infrastructure through decreased wildfire risk, increased water supply, aquatic habitat obligations



Corporations

Community resilience, improved water supply, community engagement/ public relations, carbon benefits, Corporate Social Responsibility (CSR)



Tourism & Rec Operators

Fish and wildlife habitat, reduced risk to assets, decreased evacuation risk, decreased risk of revenue loss



Local Ag Organizations

Improved crop quality and reliability through decreased wildfire risk, increased water supply, improved water quality, community investment



Municipal or State Govs

Community protection, Protected Infrastructure, fish and wildlife habitat and resource protection, watershed health



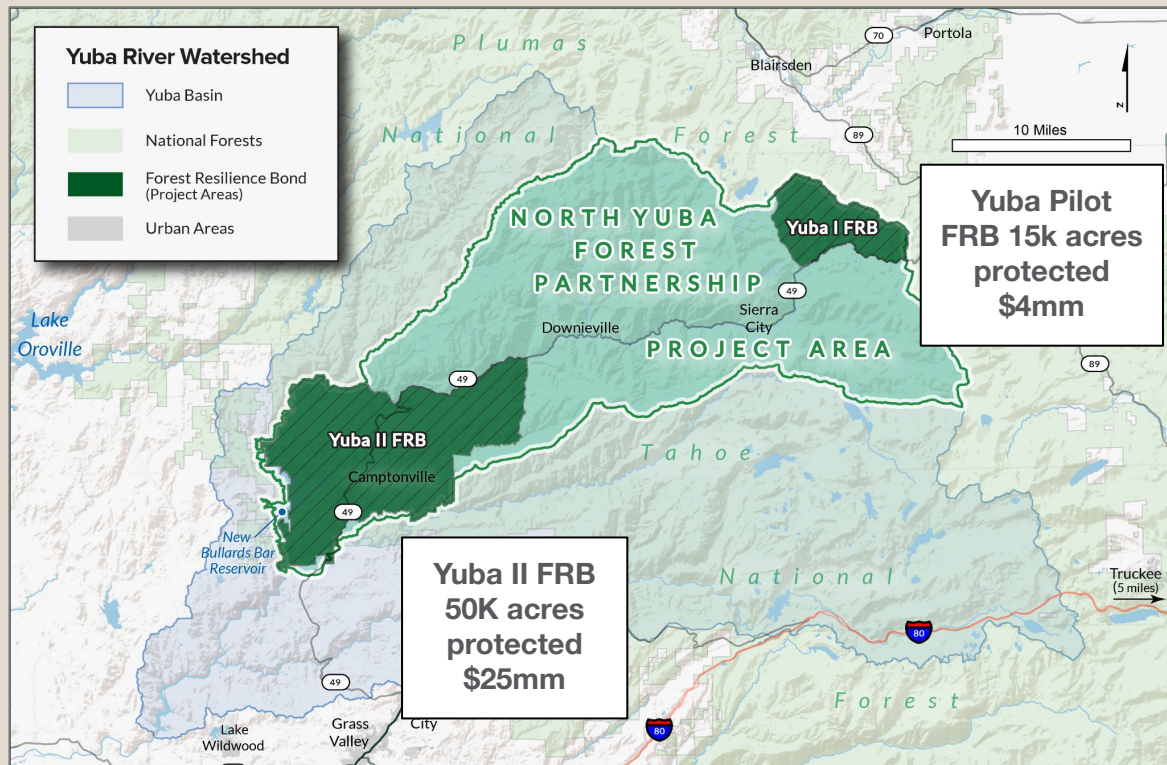
Project Case Study: Yuba I & II FRBs

Activities: Thinning, prescribed burning, meadow restoration, etc.

Implementer: National Forest Foundation

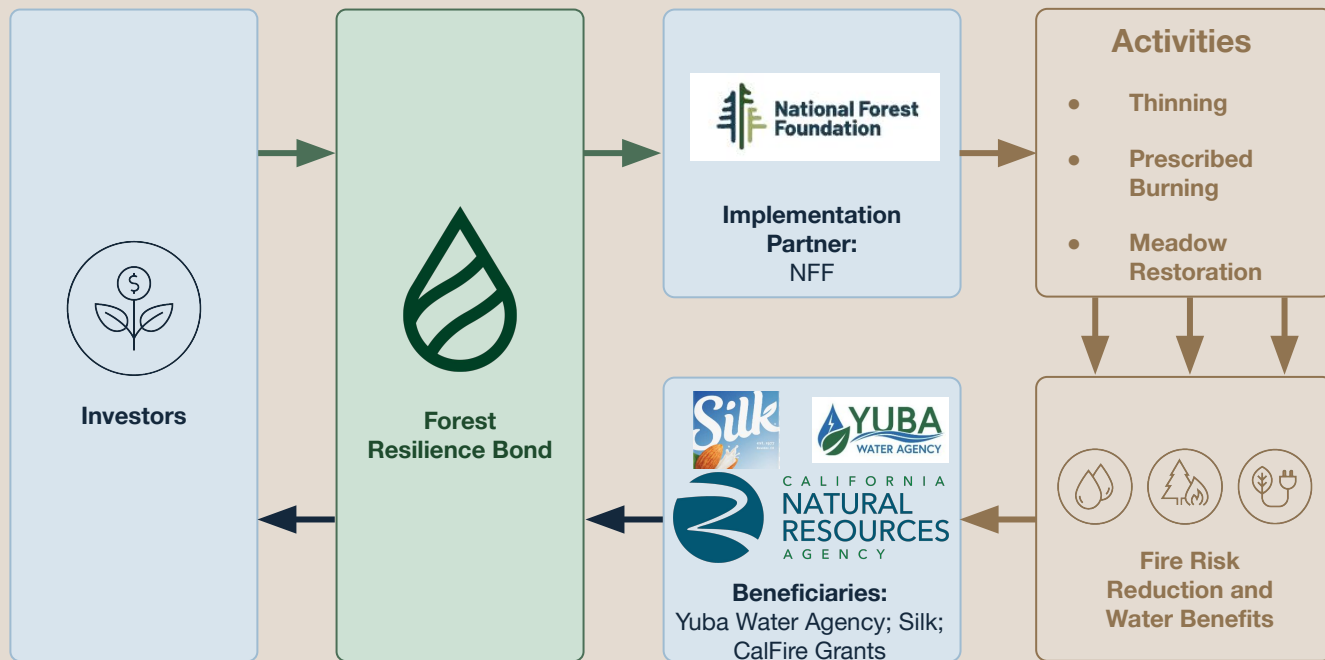
Beneficiaries: Yuba Water Agency, State of California, and – for Yuba II – private corporations

Impact: FRB development catalyzed formation of the North Yuba Forest Partnership and follow-on funding opportunities

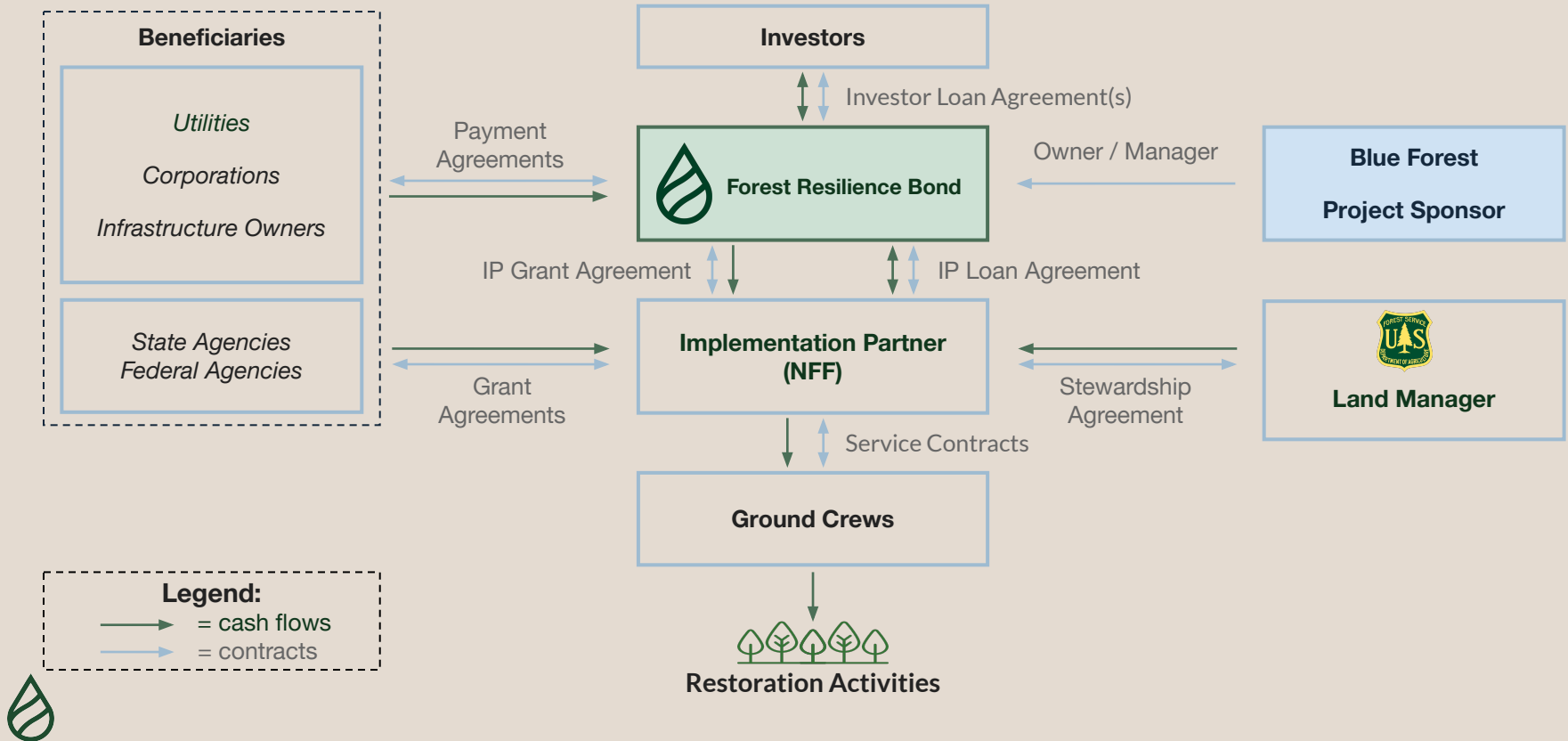


North Yuba River Watershed, Tahoe NF, California

The Forest Resilience Bond (FRB)



FRB Structure and Agreements



Yuba FRB Reflections

Successes

- ❑ Unlocked \$16M in beneficiary payments
- ❑ Scaled across 50,000 acres on the Tahoe NF and provided modeling for other projects
- ❑ Formation of the North Yuba Forest Partnership
- ❑ Increased pace to half the projected project timeline

Challenges

- ❑ Mill constraints and competition with salvage logging in CA
- ❑ Building partnerships, buy-in, and trust takes time
- ❑ Funding gaps for permitting, planning, and pre-implementation work

Lessons Learned

- ❑ Building implementation capacity is essential to scaling treatments
- ❑ Long-term contracts can support capacity building opportunities for implementation partners
- ❑ Project champions and collaborative working processes are critical



Exploring pilot FRBs in Plumas & Lassen NF

Three pilots:

- North Feather I FRB
- Community Protection I FRB
- Upper Butte Creek I FRB

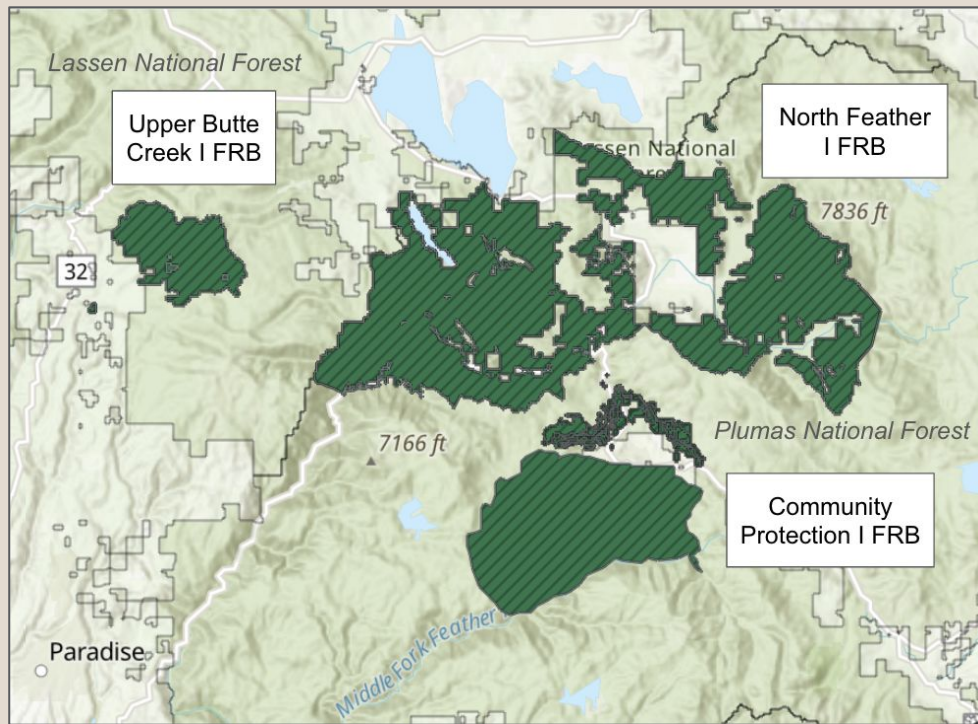
Watersheds: Feather River & Butte Creek

Implementer: Sierra Institute and others

Beneficiaries: Metropolitan District of Southern California, State of California, and others

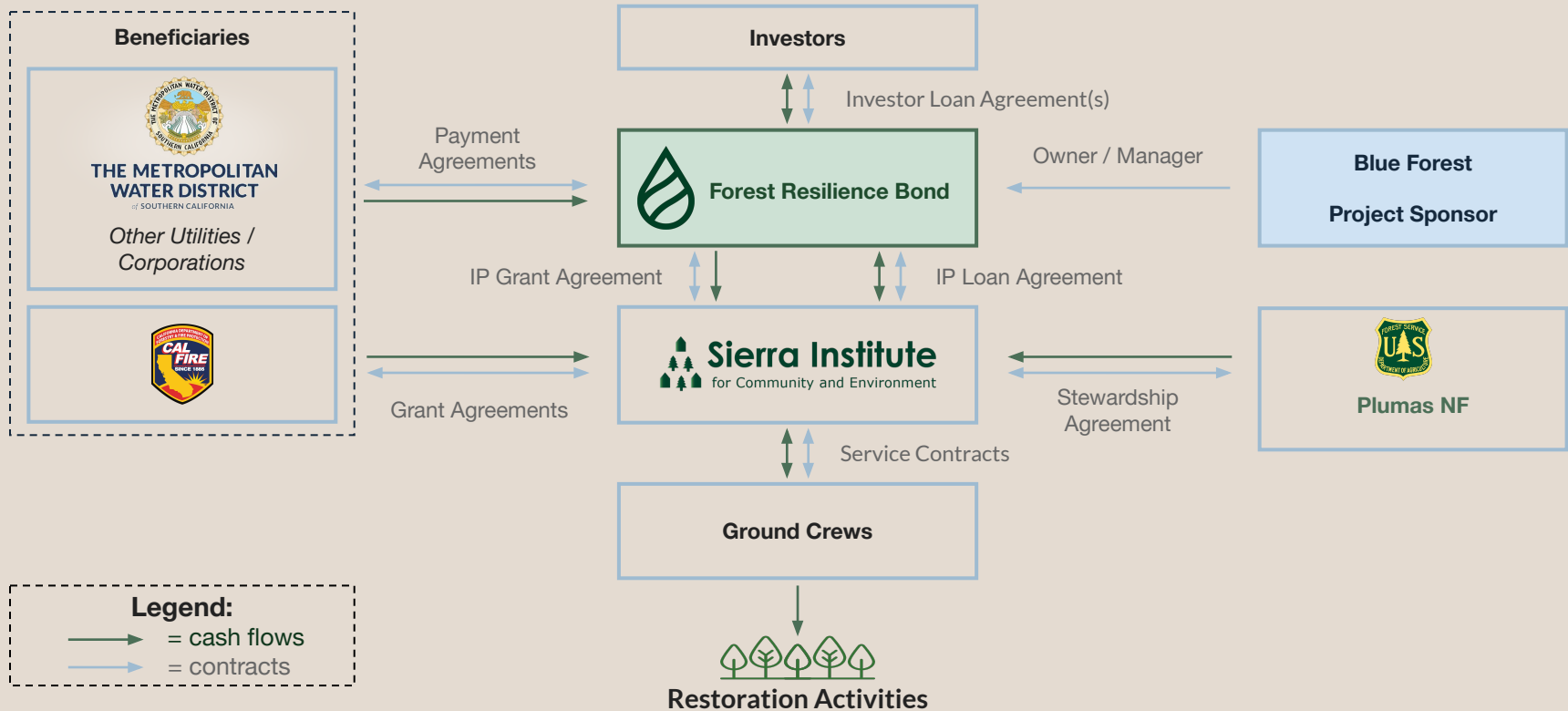
Activities: prescribed fire, thinning, reforestation, invasive species management, hydrological improvements, trail development

🌿 Blue Forest



USFS project areas being considered for pilot FRB footprints within the Plumas and Lassen National Forests

FRB Structure and Agreements



Benefits of the FRB



Closes funding gaps for implementation by blending public and private funding



Unlocks financing to increase the pace of implementation



Promotes collaboration and new partnerships for long-term landscape resilience



Communicates impact through monitoring and impact reporting



FRB Projects in the Western U.S.



State	Project	Implementation Partner
WA	Okanogan Wenatchee – Upper Wenatchee I FRB	Chelan County
OR	Rogue River-Siskiyou - Rogue Valley I FRB	Lomakatsi Restoration Project
CA	Lassen - Upper Butte Creek	Sierra Institute
CA	Plumas - Community Protection	Sierra Institute
CA	Plumas - North Fork	Sierra Institute
CA	Tahoe - Yuba I FRB	National Forest Foundation
CA	Tahoe - Yuba II FRB	National Forest Foundation
CA	Eldorado - Crystal Basin	Great Basin Institute
CA	Eldorado - Upper Mokelumne I FRB	Upper Mokelumne River Watershed Authority
CA	Inyo - Mammoth Lakes	The Whitebark Institute
CA	San Bernardino - N. Big Bear	National Forest Foundation

Thank you for your time

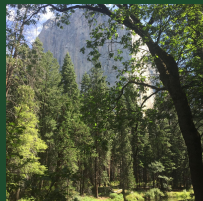
If you'd like more information,
please get in touch.

Email
nick@blueforest.org

Call
916-234-3690



Key Benefits of Ecosystem Restoration



01 BIODIVERSITY

Resilient ecosystems are characterized by varied species compositions and structure across a landscape.



04 RECREATION

Healthy ecosystems support numerous outdoor recreation activities.



07 COMMUNITY RESILIENCE

Resilient ecosystem forests protect communities from the impact of high-severity, catastrophic wildfires.



02 WILDFIRE RISK REDUCTION

Resilient forests are at decreased risk of high severity fire, protecting ecosystems, communities, and infrastructure from harm.



05 WATER SECURITY

Resilient forests and ecosystems maintain clean and abundant water for human consumption, irrigation, industry, and power generation.



08 ECONOMIC DEVELOPMENT

Restoration and maintenance of resilient forests and other ecosystems create jobs and supports businesses through project implementation and wood products manufacturing.



03 HABITAT PROTECTION

Healthy ecosystems provide key habitats for a diverse range of animal species.



06 CARBON STABILITY

Resilient forest ecosystems are less susceptible to high severity fire, reducing the emission of carbon stored in trees during a wildfire.



09 PUBLIC HEALTH

Resilient forests and other ecosystems protect multiple aspects of public health, including reducing smoke exposure by lowering the risk of severe wildfire and protecting water quality.



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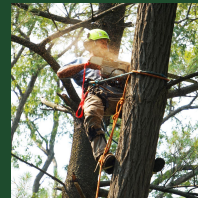
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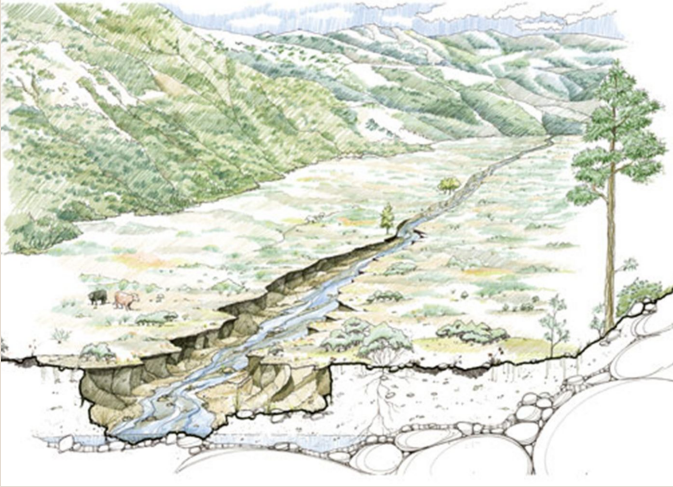


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Evaluation of Benefits Example



Meadow Degradation and Restoration



Yuba I Project Expected Benefits and Beneficiaries

- Protect 50k acre-feet of water
- Protect 70k MWh of hydropower
- Avoid 50k metric tons of CO₂ emissions
- Sustain 79 jobs in local communities
- Identified \$8.8M in economic value



What is the Forest Resilience Bond (FRB)?

The Forest Resilience Bond is an innovative public-private partnership that deploys private capital to **ease cash flows** and **add new revenue streams** to fund restoration work.

