


# The Forest Resilience Bond

ANNUAL IMPACT REPORT 2020





“In our four years of collaboration, the Forest Resilience Bond has blossomed from an idea into a first-of-its-kind transaction to advance conservation. The project has set the foundation for replication throughout California and across the West.”

*Todd Gartner*

*Director of WRI's Natural Infrastructure and Cities4Forests Initiatives*

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# To Our Blue Forest Community

Twenty-twenty was a year of many challenges. The coronavirus pandemic spread worldwide and we saw, yet again, the worst ever wildfire season on record. We are unfortunately all too familiar with the lives lost, the social isolation, and economic devastation from these dual tragedies.

In California alone, nearly 10,000 wildfires affected 4.2M acres and caused \$12B in damages. Despite the numerous headwinds 2020 presented, our partners at the National Forest Foundation found creative solutions to continue to implement the Yuba Forest Resilience Bond (FRB) Project, throughout these unexpected conditions while protecting the health and safety of crew members. We are thankful for the (physically distanced) work these crews have accomplished. At the end of the day, **our work at Blue Forest reduces the risk of large damaging wildfires**, like the ones we saw last year, even with lightning, wind, and other severe weather events that continue to affect our forests and communities.

With restoration work continuing on the Yuba FRB pilot project, Blue Forest continued working to expand the FRB to new locations. We are proud to share that in 2021, Blue Forest will launch the second Forest Resilience Bond! This is possible through the generosity of our funders and the commitments of our partners, which allowed us to add capacity to our team and build out the pipeline of future FRB projects.

As the impacts of climate change continue to escalate and fire seasons become longer every year, we're constantly reminded of how important forest resilience is for communities, watersheds, and biodiversity. It is vital that this work be scaled up to meet the wildfire challenge in front of all of us. We look back at 2020 humbled by global events and with added determination to use finance as a key tool to achieving the necessary scale of forest resilience and ecosystem protection. We look ahead to 2021 with optimism as we work to expand our impact in California, the Pacific Northwest, and beyond.

Sincerely,  
The Blue Forest Executive Team

Zach Knight  
Chief Executive Officer

Nick Wobbrock, P.E.  
Chief Operating Officer

Phil Saksa, PhD  
Chief Scientist



Our Blue Forest team celebrated the holidays virtually in 2020.



# About the 2020 Impact Report

The Forest Resilience Bond 2020 Impact Report tracks the environmental, economic, and social impacts to the local ecosystems and communities where our first Forest Resilience Bond (FRB) project was implemented during this reporting year. Our measurement and reporting align with the U.N.'s Sustainable Development Goals, which outline how to achieve a better, brighter, more sustainable future for people and the planet.

# About the Forest Resilience Bond

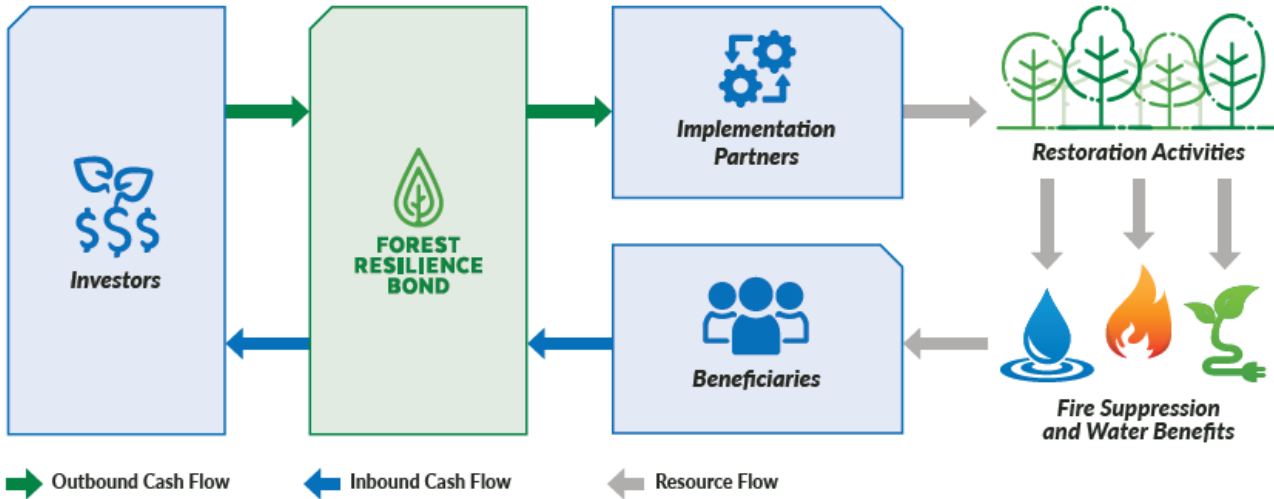
The Forest Resilience Bond (FRB) seeks to overcome the funding gap for forest restoration, not through increases in public or philanthropic sources, but by allowing private capital to play a role in supporting public land management through the US Forest Service.

With the FRB, Blue Forest is taking the critical steps of bridging the gap between investors and environmental interventions by developing the measurement techniques, innovative contracting approaches, and financial structures that allow private capital to fund land management. These management activities have far-reaching benefits beyond mitigating wildfire risk: forest restoration activities can also enhance water supply, increase the reliability of hydropower systems, protect areas for recreation, promote carbon sequestration, protect biodiversity, and protect air quality.

Blue Forest launched the inaugural FRB pilot in Tahoe National Forest's North Yuba River watershed in November 2018. The FRB provides \$4 million in funding from four investors for ecological restoration treatments across 15,000 acres of National Forest System land. Three beneficiaries – the US Forest Service, Yuba Water Agency, and the State of California – provide funding and in-kind support at contracted rates to reimburse investors as restoration activities are carried out by the National Forest Foundation, the project's primary implementation partner.

After two completed field seasons of restoration work, the Yuba I pilot project is now 50% complete and on track for the originally planned project completion. Investors have been repaid according to contracts, and The North Yuba Forest Partnership, a group of project partners and stakeholders, has formed in order to expand this restoration project, using the FRB, to the rest of the watershed.

## FLOW OF FUNDS OF THE FOREST RESILIENCE BOND





## Letter From Forester Dr. Paul Hessburg

### *An Unprecedented Wildfire Season*

Over the past 35 years, large and destructive wildfires have become common across Western North America; 2020 was yet another unprecedented year. In Colorado, Oregon, Washington, Montana, and California, record-setting fires tested the resilience of land managers, wildland firefighters, and communities already dealing with the impacts of a deadly pandemic. During August in California alone, 560 wildfires burned across the state at the same time, forcing over 100,000 people to evacuate their homes. Five of the six largest fires in state history were burning [at the same time](#). The ecological impacts of these wildfires will be felt for decades; some social and economic impacts will be felt for a lifetime.

For foresters and land managers, adapting current forest conditions to become resilient to wildfire and climate change -- within an adequate time frame -- will require increasing the pace and scale of adaptive treatments that can adequately address more than a century of fire exclusion. It is imperative that land managers be provided the planning and financial resources, and personnel needed to address highly altered forests and rapidly changing climatic and wildfire regime conditions throughout the West.

The management of our forests has a direct impact on nearby rural communities and urban population centers. For example, over 50% of all water supplied in the U.S. originates from forested watersheds that are now at risk of large and severe wildfires. What's more, **wildfire smoke -- amplified in large fire years -- diminishes land sector carbon stocks, and increases harmful air pollutants and greenhouse gas emissions to rival those of fossil fuels in some western states.** Our collective work now is two-fold; recovery from recent large fires and a renewed focus on the development of robust strategies to support forest adaptation to wildfire and climate change, for the health of the forests, and for the many communities that rely on them.

-Dr. Paul Hessburg, Professor at the University of Washington



*Paul Hessburg is an affiliate professor in the School of Environmental and Forest Sciences at the University of Washington and also a research ecologist with the U.S. Forest Service's Pacific Northwest Research Station. His research focuses on the ecology of western U.S. forests, the effects of climate change on forests, wildfire resilience mechanisms and landscape restoration.*





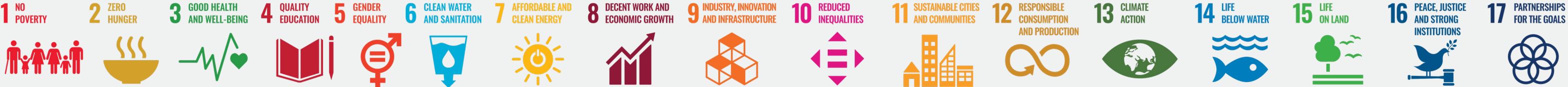
# SUSTAINABLE DEVELOPMENT GOALS



## Measuring Impact

**Impact Measurement & Management** is the process of first identifying our organization’s desired impacts and then monitoring our progress towards achieving those goals while continually revising our measurement approach. This is an iterative process and we expect to improve and expand our impact over time. Blue Forest largely defines our impact through Project Outcomes – the environmental, economic, and social effects of project activities in the local ecosystems and communities in which FRB projects are implemented. In order to best highlight the broad, multilayered impacts of the FRB and be accessible to a community of decision makers who may support or invest in future projects, we have chosen to align our Project Outcomes impact reporting with the Sustainable Development Goals (SDGs).









The **Sustainable Development Goals** are 17 goals that outline how to achieve a better, brighter, more sustainable future for people and the planet. Announced by the United Nations in 2015 as part of their 2030 Agenda for Sustainable Development, these goals represent a call to action for all countries to end poverty and improve human well-being while tackling climate change and preserving our planet. The 17 goals are therefore an international agenda by which individual countries can compare their progress and individual organizations can track their contributions towards these universal efforts.





# Forest Resilience Bond Impact Summary

The eight SDG targets indicated below are those relevant to the Forest Resilience Bond and demonstrate the ways in which the FRB contributes to social, economic, and environmental goals. By using the SDG framework, we align the impact of the FRB with the impact of those working around the world for a more sustainable future. Active forest management yields not only a reduction in severe wildfire risk, but also many other benefits, including the following:

SDG Goal	Related Outcomes	Forest Resilience Impact
 <b>03 Good Health and Well-Being</b>	<ul style="list-style-type: none"> <li>» Reducing the risk and scale of wildfire smoke</li> <li>» Preventing smoke related comorbidities</li> <li>» Reducing the emotional, physical and financial stress resulting from wildfires</li> </ul>	Proactive forest management can reduce smoke intensity and public health risks. Studies have already shown that exposure to wildfire smoke causes respiratory and cardiac-related illnesses. <sup>2</sup> In the future, it's estimated that 82 million people will be exposed to at least one smoke wave in the Western U.S. alone. <sup>3,4</sup> Emotional stress in communities coping with wildfire disaster response can be particularly severe. <sup>5</sup>
 <b>06 Clean Water and Sanitation</b>	<ul style="list-style-type: none"> <li>» Protecting water infrastructure and water quality from catastrophic wildfire</li> <li>» Securing additional water supply through forest restoration</li> </ul>	Water originating from the Sierra Nevada mountain range, where the Yuba Project is located, constitutes 60% of California's consumptive water supply. When fires burn through forests, they contaminate both surface and groundwater as well as inhibit snowpack retention. As of 2020, forest restoration has enabled 13,600 acre-feet of a total estimated 50,000 acre-feet of source water supply more resilient.
 <b>07 Affordable &amp; Clean Energy</b>	<ul style="list-style-type: none"> <li>» Generating renewable energy from biomass utilization</li> <li>» Augmenting existing hydropower in the watershed</li> </ul>	Source water supply from the Yuba Project is used to generate hydropower that helps power local communities with cleaner, more reliable, renewable, non-fossil-fuel emitting energy. Biomass based on by-products of fuel treatment is a sustainable source of energy and revenue for local economies.
 <b>8 Decent Work &amp; Economic Growth</b>	<ul style="list-style-type: none"> <li>» Investing funds in ecosystem restoration</li> <li>» Creating jobs in rural communities</li> </ul>	Every \$1M dedicated to forest restoration in Blue Forest's FRB model creates about 20 direct or indirect jobs. The \$4M Yuba FRB has supported a total of 51 direct and indirect jobs so far that strengthen local economies. As we scale to larger projects, employment from these local communities will also scale.
 <b>11 Sustainable Cities &amp; Communities</b>	<ul style="list-style-type: none"> <li>» Protecting people &amp; infrastructure by reducing the risk of high severity wildfires</li> </ul>	The road work done as part of these projects reduces the adverse effects of wildfire by providing safe escape corridors through fire country for local residents. It also helps make these areas more easily navigable, allowing local communities to benefit from increased tourism and public access.
 <b>13 Climate Action</b>	<ul style="list-style-type: none"> <li>» Stabilizing forest carbon stocks by reducing wildfire risk</li> <li>» Enhancing the carbon sequestration capacity of meadows and restored forests</li> </ul>	Fires in 2020 alone emitted 4x the amount of carbon dioxide as all other pollutants within the state - <i>combined</i> . The greenhouse gas emissions resulting from these fires were equivalent to driving 24.2M cars for an entire year <sup>6</sup> --which is not far from the 26.1M automobiles registered by the DMV in 2019. <sup>7</sup>
 <b>15 Life on Land</b>	<ul style="list-style-type: none"> <li>» Restoring forest ecosystems to a more natural density and condition</li> <li>» Protecting sensitive or endangered species</li> <li>» Promoting biodiversity through fortifying and restoring high priority ecosystems</li> </ul>	When these wild habitats are restored, a part of our national heritage is too. This work ensures that these national public lands remain places that future generations can continue to enjoy. The Yuba Project includes invasive species removal, meadow restoration, and aspen regeneration which all contribute to the critical role our forests serve to protect biodiversity.
 <b>17 Partnerships for the Goals</b>	<ul style="list-style-type: none"> <li>» Partnering with organizations who share our vision to achieve these goals</li> </ul>	The FRB takes the crucial step of lowering the hurdle to participate in forest resilience efforts. By design, the FRB can only function through strong partnerships and collaboration. By knitting together several partners with aligned goals, the FRB promotes an essential shared vision for a climate-resilient future.



# Implementer Spotlight: The National Forest Foundation

## Notes on the 2020 Field Season

In 2020, the National Forest Foundation (NFF) worked with the Tahoe National Forest to complete a second field season on the Yuba project despite the challenges of COVID-19 and the unprecedented wildfire season that ravaged the state of California and the Pacific Northwest. These challenges were met head on by a combination of policy and protocol changes and work streamlining that allowed for a productive year of work to accomplish Yuba FRB goals.

“In an effort to ensure the continued safety of Forest Service personnel, NFF staff, and all of our contractors, NFF developed a robust COVID-19 policy in 2020. Due to our new policy, we were able to safely keep operations going throughout the field season,” explained NFF Tahoe Area Program Coordinator, Trevor Seck.

In addition to addressing COVID-19 concerns, on-the-ground work crews also had to manage the severe wildfire season. Given the weather conditions, prescribed burns were unable to be conducted as planned in 2020 and were postponed until 2021. “Prescribed fire is always tricky due to Forest Service staff capacity, the need for proper fuel moistures, and the need for alignment with weather conditions,” Seck said.



“Personally, it has given me a sense of confidence knowing we can move forward with projects without having to worry about roadblocks with funding or payments at that immediate time.”

**Trevor Seck**

*Tahoe Area Program Coordinator at the  
National Forest Foundation*

Despite these challenges and interruptions, the FRB allowed the NFF to have a critically important, upfront funding source, which has enabled them to better adapt to the myriad of challenges resulting from the pandemic and the severe wildfire season. “The FRB has also streamlined the process for working with contractors,” says Seck. “Personally, it has given me a sense of confidence knowing we can move forward with projects without having to worry about roadblocks with funding or payments at that immediate time. I know our contractors appreciate quick payments for the incredible work they are doing.”

*The National Forest Foundation would like to acknowledge the staff of the Yuba River Ranger District of Tahoe National Forest, the South Yuba River Citizens League (SYRCL), the North Yuba Forest Partnership as a whole, and all the contractors getting work done in the field. The contractors working on the Yuba project include Robinson Enterprises, Beale Mountain Forestry, Summit Forest Inc., Firestorm Wildland Fire Suppression Inc., Diamond Road Maintenance Inc., Mountaineers Fire Crew Inc., SYRCL, RCO Reforesting Inc. and Red Mountain Resources.*



“For me, the most compelling part of the Blue Forest / Berkeley partnership is the idea that we can leverage and monetize environmental benefits... to support forest restoration.”

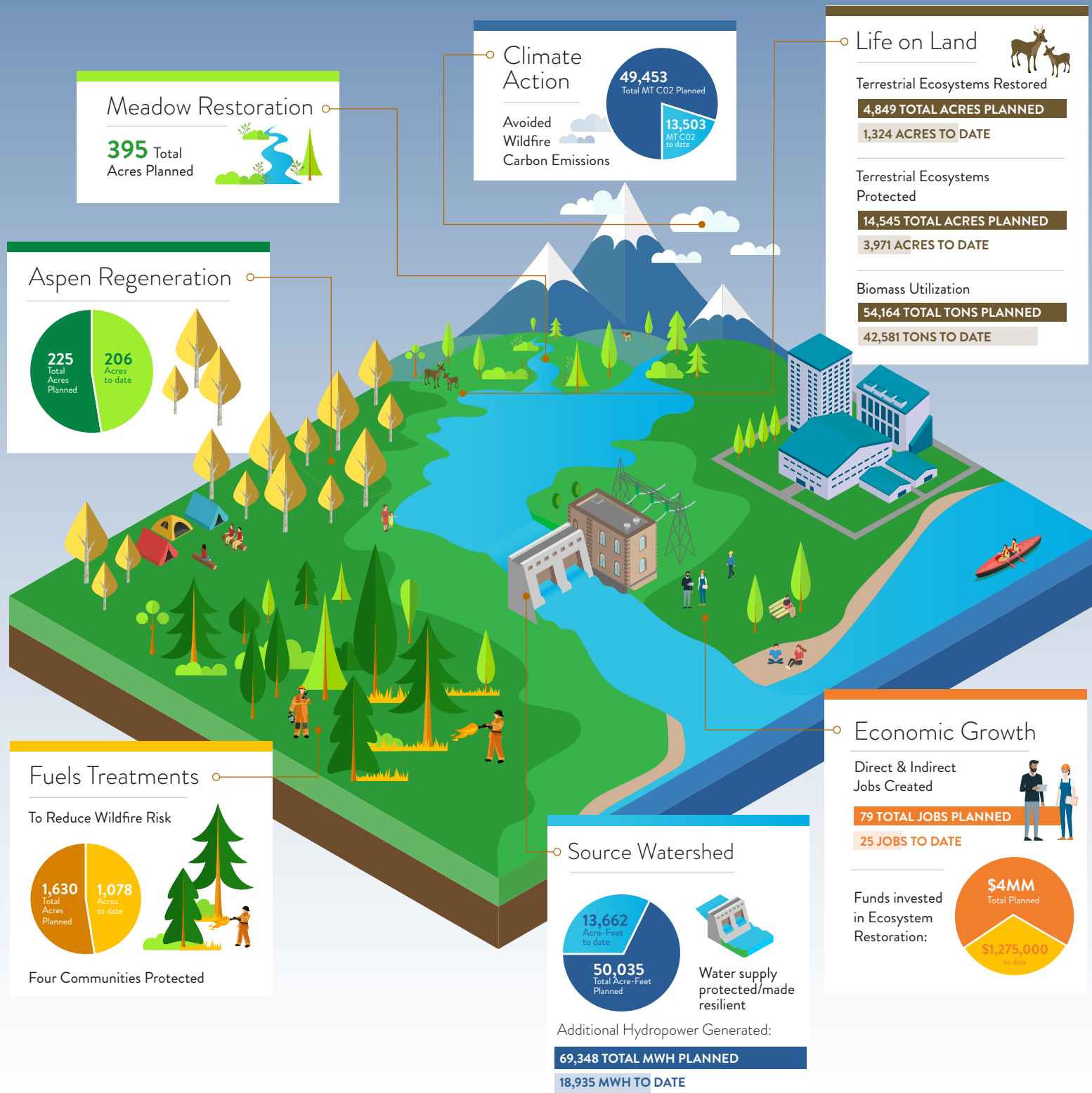
**Dr. Daniel Sanchez**

*UC Berkeley Department of Environmental Science,  
Policy and Management*



The National Forest Foundation manages implementation of Yuba Project activities, which yield a host of environmental, social and economic benefits. Forest restoration activities, planned by Tahoe National Forest, were initiated in 2019 and are expected to be completed by 2022.

\$1,275,000 of \$4M Funds Invested In Ecosystem Restoration



## The FRB Development Team

The development team is responsible for fostering collaboration among the many stakeholders and bringing the FRB to market.



### Blue Forest

Blue Forest is a mission-driven non-profit project development firm focused solely on leading the FRB development process. With expertise in hydrology, finance, philanthropy, engineering, forestry, and government, the Blue Forest team coordinates with partners to manage all aspects of FRB development.



### Forest Service

The Forest Service is a government agency within the U.S. Department of Agriculture with a mission to “sustain the health, diversity, and productivity of the Nation’s forests and grasslands to meet the needs of present and future generations.” The agency manages 193 million acres of national forests and grasslands across the country and is a key partner with Blue Forest in developing and implementing FRB projects.



### World Resources Institute

The World Resources Institute (WRI) is a global non-profit research organization that seeks to create equity and prosperity through sustainable natural resources management. WRI brings a diverse set of decision-making tools to the FRB that help support engagement and adoption of the FRB among stakeholders.



Yuba FRB Impact 2020						
SDG Target	Project Outcome	Unit	2019	2020	Total Planned	% Completed
<b>6</b>	<b>Clean Water &amp; Sanitation</b>					
	Water supply protected/made resilient	Acre-feet	7,398	13,662	50,035	27%
<b>7</b>	<b>Affordable &amp; Clean Energy</b>					
	Biomass Utilization	Tons	13,750	42,581	54,164	79%
	Renewable Energy Generated by Biomass	MWh	3,998	--	15,750	25%
	Hydropower Protected	MWh	10,254	18,935	69,348	27%
<b>8</b>	<b>Decent Work &amp; Economic Growth</b>					
	Direct & Indirect Jobs Created	#	17	25	79	32%
	Total Funds Invested in Ecosystem Restoration	\$	\$875,000	\$1,275,000	\$4,000,000	32%
<b>11</b>	<b>Sustainable Cities &amp; Communities</b>					
	Road Reconstruction	Miles	4	4	5	80%
	Fire Control Lines	Miles	25	25	25	100%
	Communities Involved	#	4	4	4	100%
<b>13</b>	<b>Climate Action</b>					
	Avoided Wildfire Carbon Emissions	MT CO2e	7,312	13,503 (+85%)	49,453	27%
<b>15</b>	<b>Life on Land</b>					
	Fuels Reduction	Acres	625	1,078	1,630	66%
	Prescribed Fire	Acres	0	0	2,510	
	Aspen Regeneration	Acres	92	206	225	91%
	Meadow Restoration	Acres	0	0	395	
	Invasive Plant Treatments	Acres	0	40	89	45%
	Terrestrial Ecosystems Restored	Acres	717	1,324	4,849	27%
	Terrestrial Ecosystems Protected	Acres	2,151	3,971	14,545	27%
<b>17</b>	<b>Partnerships for the Goals</b>					
	Formal Blue Forest FRB Partners	#	18	18	18	100%
<b>Cumulative % Complete</b>						<b>49%</b>

## Yuba Project Outcomes

The chart details Project Outcomes achieved under the eight relevant Sustainable Development Goals. These Project Outcomes have a project-wide “Planned Total” that will be achieved upon completion of full FRB activities (and the enhanced ecosystem services that will continue into the future) as well as metrics that detail progress made over the 2020 work season.

Thanks to the phenomenal partners on the ground, all of the work is on schedule to meet the 2022 goals identified in the chart below--and it's on schedule. This is especially meaningful in light of 2020's significant headwinds. With FRB financing and the modest revenue reinvested from timber sales, the partners on the ground were able to work with fewer interruptions--a stark contrast to non-FRB projects where restoration work would be interrupted by delays in funding.

The key metrics in the table below are ecosystems restored and ecosystems protected; those metrics represent the core of Blue Forest's work. Other metrics further characterize restoration and protection activities and the progress our partners have made. The pandemic and the numerous fires put some limitations on prescribed burning, but it is still expected to meet 2022 goals. Along the same lines, meadow restoration is typically an activity completed in the later years of a forest restoration project and is on track as well.





## Our Partners

### RESEARCH PARTNERS

Researchers and academics are crucial to the quantification and valuation of forest restoration benefits over the life of the FRB. Partners include the Sierra Nevada Research Institute at the University of California Merced and the Natural Capital Project and Water in the West at Stanford University.



### PRO BONO LEGAL PARTNERS

A core element of the FRB is contracting with beneficiaries and other stakeholders. The development team is fortunate to receive pro bono legal support from Orrick, Herrington & Sutcliffe LLP and Brownstein Hyatt Farber Schreck, LLP.



### YUBA PROJECT INVESTORS

Our first FRB would not have been possible without the generous and trusting organizations who took an investment risk on a new manager and an innovative structure. Project investors are CSAA Insurance Group, Calvert Impact Capital, The Rockefeller Foundation, and the Gordon and Betty Moore Foundation.



### BLUE FOREST FUNDERS

The development of the FRB relies on the generous support of a number of public and private funders including The Rockefeller Foundation, the Gordon and Betty Moore Foundation, Spring Point Partners, ClimateWorks Foundation, J.M. Kaplan Fund, the Weyerhaeuser Family Foundation, the Doris Duke Charitable Foundation, The Caterpillar Foundation, Great Island Foundation, and the Bella Vista Foundation. Additional support has been provided by the USDA-NRCS Conservation Innovation Grant program, the USDA Small Business Innovation Research program, and the Healthy Watershed Consortium Grant Program, a partnership that includes the U.S. Environmental Protection Agency, the USDA Natural Resources Conservation Service, and the U.S. Endowment for Forestry and Communities.



### FRB PROJECT PARTNERS

Our first FRB would not have been possible without the generous and brave organizations who took a risk to support and fund this innovative idea. Project partners included Sierra Nevada Conservancy, Tahoe National Forest, the California Climate Investment Program, the Yuba Water Agency, the National Forest Foundation, Social Finance and the U.S. Endowment for Forestry and Communities. Since then, new partnerships have also been forged to help build future FRBs.





# Investor Spotlight: The Rockefeller Foundation

## Supporting Innovative Finance

The Forest Resilience Bond would not have been possible without the visionary foundations who first funded the development of the FRB - and later invested in the FRB pilot project. They identified the potential of the Forest Resilience Bond at the Morgan Stanley Sustainable Investment Challenge in 2015 where the Blue Forest team won the grand prize. After that, the Rockefeller Foundation offered a grant through their [Zero Gap Fund](#), which “sources, funds, and develops innovative financial solutions that demonstrate the potential to catalyze large-scale private investment towards the Sustainable Development Goals (SDGs).”



“There’s a big opportunity now, as climate becomes a bigger issue for Blue Forest to continue to push forward.”

**Andrea Barrios**

*Portfolio Manager at the Rockefeller Foundation*

The FRB has become a shining example in Rockefeller’s Zero Gap Portfolio due to both its impact and performance. “The Forest Resilience Bond is one investment that we always talk about, it’s one that the Foundation is really proud of—from the early grant days to where they are now... We’ve really been on this journey together,” said Innovative Finance PRI Portfolio Manager, Andrea Barrios.

After supporting development of the FRB through a grant to Blue Forest, the Rockefeller Foundation knew the FRB pilot project offered a strong follow-on opportunity for a Program Related Investment (PRI). “We are very confident and comfortable in the financial profile of our million dollar PRI loan to the Yuba FRB,” said PRI portfolio Principal, Caleb Ballou. “It’s probably the lowest risk investment in our entire portfolio - and it’s an incredible story. It’s one that people identify with, and it offers us a great way to communicate the Zero Gap Fund philosophy. Plus, it’s performing very well,” he added.

“There’s a big opportunity now, as climate becomes a bigger issue, for Blue Forest to continue to push forward,” concluded Barrios. With the early support of the Rockefeller Foundation, the generous ongoing support of many other foundations, and the rise of the climate and wildfire crises - the Forest Resilience Bond is more critical now than ever. (See page 19-20 for a full list of Blue Forest grant supporters.)

# Investor Spotlight: CSAA Insurance Group

## Reducing Wildfire Risk in Northern California

Northern California-based CSAA Insurance Group provides AAA-branded insurance, and is dedicated to assisting its customers in times of need -- including the aftermath of wildfires. As a socially-minded company, CSAA also dedicates a portion of its investment portfolio to serving community needs.

“The Forest Resilience Bond is part of this portfolio, allowing us to generate reasonable returns while serving the areas where our customers live,” said Gretchen Tai, Vice President of Investments. “We welcome the introduction of new investment opportunities like the FRB that create positive environmental outcomes while reducing risk and delivering positive rates of return.”



“Investing in healthy forests is good for California and good for our customers, and we are proud to be a part of this solution.”

**Gretchen Tai**

*Vice President of Investments at CSAA Insurance Group*

As an insurer with thousands of customers living in areas at risk of wildfires and other disasters, taking preventative steps to help protect customers is essential to CSAA’s business. For this reason, the insurance company was one of the first investors in the FRB.

“The FRB is a unique opportunity in that it directly addresses a key and critically important aspect of the insurance business: the reduction of risk. This success of the FRB is encouraging, as it stands to attract other institutional investors that are willing to allocate meaningful capital with the objective of doing well by doing good,” said Tai.

The company expects that the expanding scope of the FRB will help discover and participate in similar investments that help reduce risk through forest and watershed stewardship.

“We are pleased to find alignment with other organizations that recognize the importance of proactively investing in the health of our forests. The more investment funding the FRB can devote to forest restoration, the more the risk from wildfire devastation can be Reduced,” explained Tai. “We are optimistic that the FRB’s continued success will attract others who recognize the benefit of supporting similarly forward-thinking projects. Investing in healthy forests is good for California and good for our customers, and we are proud to be a part of this solution.”



## Looking Ahead

### North Yuba Forest Partnership Status & Planning

In 2019, a diverse group of nine organizations passionate about forest health and the resilience of the North Yuba River watershed formed the North Yuba Forest Partnership (NYFP). The group was formed after the success of the initial Yuba Project on the Tahoe National Forest.

The organizations, local governments, tribes, large NGOs, and FRB partners that comprise the NYFP are; Blue Forest, [National Forest Foundation](#) (NFF), [U.S. Forest Service](#), [Yuba Water Agency](#) (YWA), [South Yuba River Citizens League](#) (SYRCL), [Sierra County, Camptonville Community Partnership](#), [Nevada City Nisenan Rancheria](#) and [The Nature Conservancy](#).

Together, this group is working on at the landscape scale to collaboratively plan, analyze, finance, and implement forest restoration across 275,000 acres of the watershed. Through ecologically-based thinning and prescribed fire, the partnership seeks to protect North Yuba communities from the threat of catastrophic wildfire and restore the watershed to a healthier, more resilient state. As a result of this collaboration, YWA's board has approved an initial \$6M for the next FRB.

#### Some of the past year's accomplishments by the NYFP included:

- » Fundraising while simultaneously planning and going through the required environmental analysis--allowing projects to be implemented even more quickly
- » Publishing a [Story Map](#) that serves as a public communication tool
- » Finalizing resilience pillars to help prioritize areas for treatments
- » Beginning a Public Engagement campaign to ensure the public is kept apprised of NYFP's progress

These restoration efforts are expected to take many years to complete, but the most critical project areas will be targeted first (i.e. at-risk communities, emergency response, evacuation access routes, and treatments to areas that have the potential to stop a wildfire from spreading).



“When I think about the North Yuba Forest Partnership, the ultimate success is that, once the implementation is complete, if a fire does happen in this region, it will not be catastrophic. The long-term goal is to save our communities, save lives, maintain ecological health, water security and water supply”

**Melinda Booth**

*Executive Director at South Yuba River Citizens League*



## Scaling the Forest Resilience Bond

The success of the \$4M Yuba project has set the stage for the FRB model to continue scaling on the Tahoe National Forest and beyond. After working with 18+ national forests to scope need and opportunity, we have identified multiple opportunities in California, Oregon, and Washington. Blue Forest has a pipeline consisting of \$100M worth of projects across 1 million acres. These expansion opportunities demonstrate the huge potential for FRB scaling as well as the need for financial instruments that extend infrastructure finance to forests and watersheds, our natural infrastructure. In addition to expanding in acreage, the FRB can also expand in scope to consider the holistic benefits of forest resilience with various foci such as salmon habitats, public health, and local economies.



**Acknowledgements**

The Blue Forest Team would like to thank the following individuals for their support and collaboration in working with us to develop this impact report.

**Trevor Seck** (*Tahoe Area Program Coordinator*), **Briana Tiffany** (*CA Program Associate*), **Evan Ritzinger** (*Program Coordinator*) and **Matt Millar** (*CA Program Manager*) at the *National Forest Foundation*

**Sherry Reckler and Jason Ko** of *Forest Service Region 5 and Nature's Benefits*

**Caitlin Rosser and Leigh Pomerantz** of *Calvert Impact Capital*

**Alonzo "Lon" Henderson**, *District Ranger of the Yuba River Ranger District at Tahoe National Forest*

**Eli Ilano**, *Forest Supervisor of the Tahoe National Forest*

**Willie Wittlesey, Terri Daly, and JoAnna Lessard** at the *Yuba Water Agency*

**Roger Bales and Martha Conklin** at *UC Merced's Sierra Nevada Research Institute*

**Melinda Booth and Andrew Salmon**, *South Yuba River Citizen's League on behalf of the North Yuba Forest Partnership*

**Caleb Ballou**, (*Principal*) and **Andrea Barrios**, (*Portfolio Manager*) at *The Rockefeller Foundation*

**Dr. Paul Hessburg**, *Professor at the University of Washington*



**Blue Forest is a non-profit organization committed to creating sustainable financial solutions to pressing environmental challenges.**

Our principal financial product, the Forest Resilience Bond (FRB), deploys private capital to finance forest restoration projects that reduce the risk of catastrophic wildfire and enhance landscape resilience. Blue Forest brings together public and private stakeholders that benefit from restoration to share the costs of reimbursing investors over time. We launched the first FRB in 2018, providing \$4 million in private capital to finance critical restoration treatments across 15,000 acres of the Tahoe National Forest. Blue Forest developed the FRB in partnership with the World Resources Institute and works closely with the Forest Service and a host of NGO and academic partners that provide research, evaluation, and implementation expertise.

**To learn more about Blue Forest:**

Visit our [webpage](#) or check out this [video](#) highlighting the Forest Resilience Bond.

For comments, questions, or suggestions on the 2020 Impact Report, send us a note at [connect@blueforest.org](mailto:connect@blueforest.org).

**ENDNOTES:**

<sup>1</sup> <https://www.fire.ca.gov/incidents/2020/>  
<sup>2</sup> Reid, C. E., Jerrett, M., Tager, I. B., Petersen, M. L., Mann, J. K., & Balmes, J. R. (2016). Differential respiratory health effects from the 2008 northern California wildfires: A spatiotemporal approach. *Environmental Research*, 150, 227–235. <https://doi.org/10.1016/j.envres.2016.06.012>  
<sup>3</sup> A "smoke wave" is defined as ≥2 consecutive days with high wildfire-specific PM2.5 to describe episodes of high air pollution from wildfires  
<sup>4</sup> Liu, J. C., Mickley, L. J., Sulprizio, M. P., Dominici, F., Yue, X., Ebisu, K., Anderson, G. B., Khan, R. F. A., Bravo, M. A., & Bell, M. L. (2016). Particulate air pollution from wildfires in the Western US under climate change. *Climatic Change*, 138(3–4), 655–666. <https://doi.org/10.1007/s10584-016-1762-6>  
<sup>5</sup> <https://www.apa.org/topics/disasters-response/wildfires>  
<sup>6</sup> <https://news.bloomberglaw.com/environment-and-energy/californias-2020-wildfire-emissions-akin-to-24-million-cars>  
<sup>7</sup> <https://www.dmv.ca.gov/portal/uploads/2020/06/2019-Statistic-for-Publication-1.pdf>





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