



North Coast Forest Biomass Strategy

Program Update, January 2024

The North Coast Resource Partnership (NCRP) and the Watershed Research and Training Center (WRTC) are partnering on a multifaceted initiative to increase the collection, aggregation, and utilization of woody biomass produced from projects that reduce hazardous fuels and enhance the health of the region's forests. This North Coast Forest Biomass Strategy (the Strategy) will help drive community and landscape-scale fire hazard reduction, watershed health, and economic resilience. This Strategy is part of the [Vision for North Coast Resilience](#) that the NCRP developed in collaboration with a wide range of regional partners and local experts, which lays out comprehensive priorities for enhancing watershed, fire, forest, and community resilience. The Strategy addresses the [Forest Biomass Residuals Solution](#) proposed in the Vision Plan, "to develop and implement a regional plan for forest biomass residuals from hazardous fuel reduction that supports ecological and economic resilience through community-scale and community-supported actions."

The North Coast Forest Biomass Strategy is funded by the California Governor's Office of Planning and Research (OPR) and the Department of Conservation's Regional Forest and Fire Capacity (RFFC) program. [California's Wildfire and Forest Resilience Action Plan Key Action 3.10](#) directs the OPR to "Address Feedstock Barriers through Pilot Projects: OPR will develop five pilot projects to test new mechanisms for developing long-term feedstock contracts. Information and templates from the pilot projects will be shared broadly to provide a menu of broader adoption options." (See Figure 1).

In 2022 NCRP was awarded a contract by the OPR for the Woody Feedstock Aggregation Pilot Project, part of this state-wide pilot program to support efforts to increase the pace, scope, and scale of fuel management efforts in the region. The project aims to provide multi-benefit alternatives to the open-pile burning of the woody biomass produced from hazardous fuel management activities, increase wildfire resilience in North Coast forests, and to provide reliable biomass outlets to private, non-industrial forest landowners. Entities that are driving innovations in woody feedstock utilization are a key element of this strategy - NCRP and WRTC are collaborating with the three sub-regional pilot teams (See Figure 2) that are evaluating effective approaches to community scale fuel load reduction, forest health, and feedstock aggregation.

Statewide OPR Feedstock Aggregation Pilot Project Regions

North Coast Resource Partnership Pilot

Lead: North Coast Resource Partnership
Partner: Watershed Research and Training Center

North Eastern Sierra-Cascade Pilot

Lead: Fall River Resource Conservation District (RCD)
Partner: Surrounding RCDs

Tahoe Central Sierra Pilot

Lead: Placer County Water Agency
Partner: Water Agencies, Placer County, El Dorado County, Sierra Nevada Conservancy, Cities

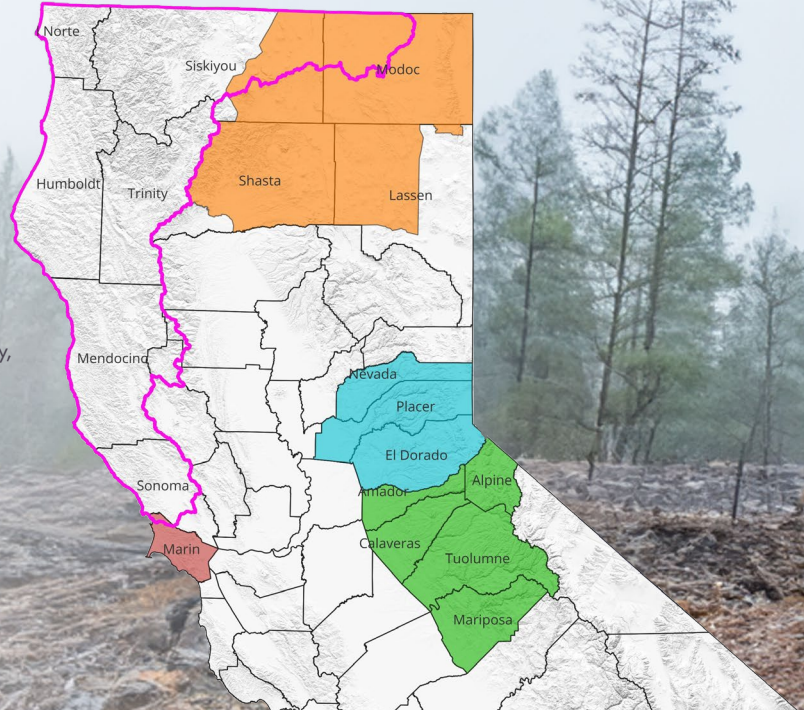
Southern Central Sierra Pilot

Lead: Mariposa RCD
Partner: Economic Development District, Cities, Counties

Marin County Pilot

Lead: Marin RCD
Partner: Marin Wildfire Prevention Authority

Figure 1. OPR has awarded five state contracts to separate regions to assess aggregation feasibility.



Strategy Overview

Reducing wildfire fuel and restoring forest health around vulnerable communities will produce large amounts of woody biomass. Currently the most common fate of this woody biomass is pile burning, with significant emissions and air quality impacts. The lack of wood processing facilities in the North Coast is a major limiting factor for a region of this size, rural nature, and complexity. Broader wood products processing capacity is critical to diverting this residual woody biomass to more beneficial uses. A coordinated approach, valuing community safety, forest and watershed resilience, and carbon sequestration alongside economic benefits could help to close the current gap in this capacity.

The North Coast Forest Biomass Strategy will explore mechanisms to provide services for improving supply chain consistency and efficiency, and expanding the opportunity for new biomass markets to develop. A vibrant, locally-led industry can help make use of the vegetation management byproduct to turn it into beneficial uses, reducing carbon emissions and wildfire risk while enhancing and maintaining local jobs and revenue. For this reason, the initiative is intended to support economic vitality for existing commercial operations and new business opportunities, as well as the development of innovative products from low value waste material – all through the lens of ecosystem health and climate resilience. This funding is not intended to procure equipment or select a technology for biomass utilization, rather it is intended to aggregate the biomass and enhance supply chain efficiency. A number of services have been identified for each pilot project to consider incorporating:



Feedstock Consistency

- Ensure cost reduction for shared services to forest landowners.
- Buy and sell biomass; enter into direct sales contracts.
- Manage biomass supply contracts between third parties (avoid owning biomass).

Land Management

- Ensure cost reduction for shared services to contractors and loggers.
- Support the continuity of a forest planning process that enables new markets to develop.
- Lease equipment to small businesses.

Market Development

- Increase market buying and selling power for new product development.
- Own a mill, biochar or energy production facility.
- Own or manage winter storage of biomass for existing and future businesses.

Policy and Economic Development

- Support new small businesses with tools to avoid long term reliance on subsidies.
- Provide regional markets an ongoing analysis of market trends and workforce needs.
- Bring in new grant dollars at a larger scale, including serving as fiscal agents.
- Advocate at the state and federal level with a consolidated regional voice.
- Focus on community education, including urban centers in California.

Planning Support for Pilot Projects

Tukman Geospatial has completed two significant work products to support the development of the pilot projects: (1) a multi-criteria wood product site assessment and corresponding feedstock analysis across the entire NCRP region based on UCANR's former sawmill facility infrastructure dataset, and (2) a mechanical feasibility land suitability analysis across the NCRP region determined by distance to roads, topography, water features, and land ownership. This work is expected to provide additional value for potential businesses to see 'hot spots' for successful biomass utilization sorting and product yards.

Tukman Geospatial has met with NCRP, WRTC, and the UC Extension office to discuss methodologies, purpose, and primary output values. The feedstock analysis focuses on working haul zones based on real cost estimates acquired from interviews conducted by WRTC, and relies on CalPoly Humboldt's CBREC post-processing harvest raster (thin from below to 40% of previous stand density) for conservative biomass estimates. Output summary tables include travel distance shells, total biomass volume located within each shell, and the average \$/BDT within each shell. A user interface will be developed for results to be seen online with options to export the results. It is important to note that these haul circles do not include in-wood harvest costs, but rather, the costs to haul a full load of biomass to a centralized processing facility.

This work will greatly reduce feedstock feasibility cost assessments for those interested in standing up a new biomass utilization business. A socioeconomic assessment and natural resource assessment are expected to be completed upon the completion of the biomass feedstock and site assessment, complementing this landscape analysis.



Sub-Regional Pilots

The development of sub-regional or community-specific pilot strategies is intended to downscale and refine information gathered in the regional assessments, considering the unique biophysical and socio-economic features of the selected sub-regions. In summer 2023, NCRP released a Request for Proposals for project sponsors and partnerships to develop a preliminary business plan that includes foundational elements of a successful organizational model for feedstock aggregation. Applicants were asked to propose an organizational structure to coordinate new and existing wood markets emerging from a growing need to implement fuel reduction and forest resilience activities. Applicants will develop a business plan and include a description of organizational arrangements that have the legal, financial, and operational capacity on the local level to aggregate woody biomass across private and public lands, and to act as a broker for long-term feedstock contracts.

In the fall of 2023, NCRP announced the selection of 3 sub-regional pilot projects (Figure 2). Each sub-region received an effective award totaling \$75,000 to begin research on new organizational structures to organize wood selling and procurement while developing funding strategies to achieve community visions for sustainable land management and community safety. Organization structures could include: Joint Powers Authorities, Community Service Districts, Climate Resilience Districts, Cooperatives, or additional legal arrangements that meet program goals. The local pilots will focus on achieving community and watershed resilience and ensuring that the proposed solutions reflect the needs and preferences of local communities in alignment with regional values.

North Coast Resource Partnership Woody Feedstock Aggregation Pilot Project Sub-Regions

*Wood baskets drawn on this map are not permanent, but reflect a generalized area of influence where these subregional pilots will assess program goal feasibility.

Dinsmore Pilot Project

Lead: Redwood Alternative Agriculture Foundation
Potential entity: Cooperative, CSD

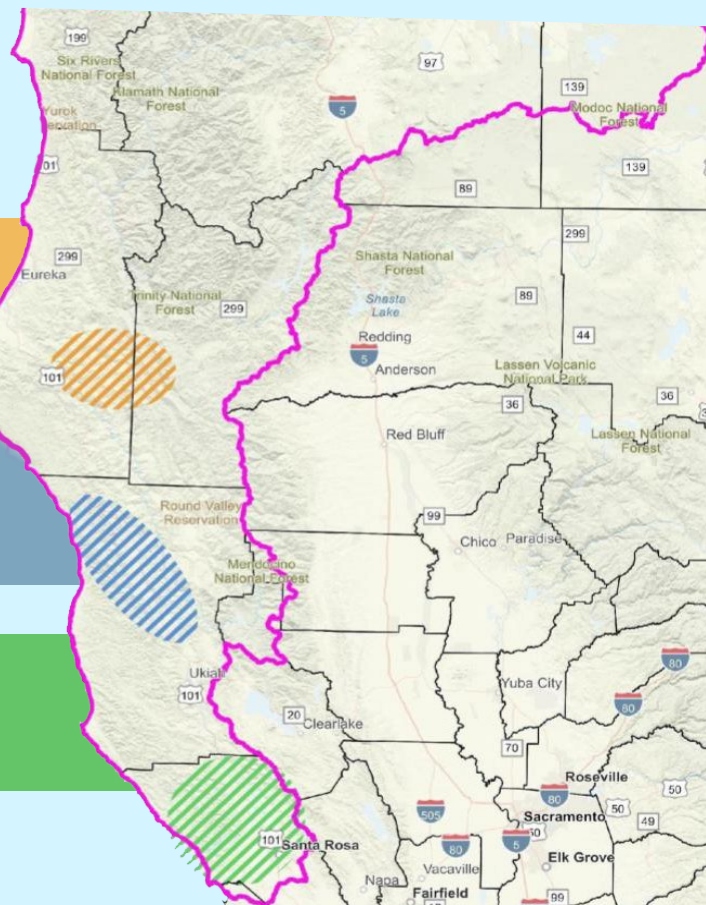
Mendocino Forest Reciprocity Cooperative

Lead: Forest Reciprocity Group
Potential Entity: Cooperative, CSD

Sonoma County Pilot Project

Lead: Regenerative Forest Solutions
Potential entity: Cooperative, JPA, CSD

Figure 2. NCRP awarded 3 subregional pilots to investigate woody feedstock aggregation feasibility.



Sub-Regional Pilot Project Goals

Each of the three sub-regional pilots will have unique scopes and timelines, but all will be working on developing a business plan or roadmap to implementation as an end deliverable. They will have one year to complete the feasibility study and project design. Next steps for entity formation and business implementation will begin soon thereafter.

1 Mendocino Forest Reciprocity Cooperative

The Forest Reciprocity Group (FRG) will develop a business plan utilizing a cooperative business model that could facilitate and broker woody biomass for landowners, forest stewardship projects, and biomass utilization businesses. We believe by keeping stakeholder capital investment low, the cooperative can stay nimble and best match the scale of both supply and demand in our region. Currently, FRG's emphasis is on harvesting and distributing small-diameter poles, but this business plan will encompass a variety of forest practices and products. The development of this business plan will determine and foster the feasibility of a pole aggregation business that could take on one or more of the following roles:

- Promotion, incubation, and contracting of biomass utilization businesses;
- Working and contracting with landowners and forest restoration projects for feedstock;
- Developing a mobile processing unit to harvest and pre-process poles; and
- Transporting poles from the woods to aggregation yards and/or buyers.

2 Sonoma County Feedstock Pilot Project

Regenerative Forest Solutions and Inquiring Systems will create the Sonoma County Woody Feedstock Pilot Project to engage stakeholders in the county to explore the structure and feasibility of implementing an aggregation entity that purchases, transports, processes, and sells underutilized small-diameter timber from a diversity of procurement sources. The entity will be guided by a vision of returning Sonoma County forests to fire resilient landscapes by improving the ecological health, function, and biodiversity of our forests upon which our communities and ecosystems depend. The simultaneous development of feedstock supply, aggregation, and utilization is key to the success of this model. Toward this goal, our business plan will analyze feedstock sources, potential markets, and outline the implementation of an aggregation entity to reach an economy of scale to help re-establish a vibrant wood products economy in our region and further support the ongoing forest stewardship needed to increase our wildfire and climate resilience.

3 Dinsmore Pilot Project

The Redwood Alternative Agriculture Foundation will create the Dinsmore Pilot Project to facilitate the removal, transportation, aggregation, and processing of woody biomass from public and private forest lands in the Eastern Humboldt/Western Trinity regions for the public good. The local community will enjoy the benefits of job creation and ecological restoration, in addition to wildfire prevention associated with the fuels reduction. The Dinsmore Pilot Project has identified key partners in the region to facilitate the aggregation of woody biomass, as well as identified a preliminary site to aggregate, sort, and process woody feedstock. This Pilot Project will allow the team the opportunity to design and document processes to meet the long-term goal of creating similar partner informed, community supported (and supporting) facilities to serve other heavily forested regions in Humboldt and Trinity Counties. The diverse backgrounds of the key partners and prior experience designing partner-involved processes will ensure the Dinsmore Pilot Project and future projects developed will prioritize long-term sustainability and reflect the respective communities' needs and environmental constraints.