

TAHOE NATIONAL FOREST, AMERICAN RIVER RANGER DISTRICT

## **The Middle Fork of the American River Restoration Project**

---

**5/11/2010**

# The Middle Fork of the American River Restoration Project

## Proposed Treatment

Page | 1

### Proposed Treatment

The American River Ranger District (ARRD) of the Tahoe National Forest (TNF) has identified a landscape restoration area where there is a significant opportunity and need to reestablish natural fire regimes and improved ecological function through multiple landscape ecological restoration projects. The CLFR landscape area is encompassed by the North Fork of the Middle Fork American River to the North and the Middle Fork American River to the South and consists of two 5<sup>th</sup> field watersheds: Most of the Upper Middle Fork of the American River (59,366 acres) and the North Fork of the Middle Fork of the American River (59,134 acres) (For Map see link on page 2 of Landscape Strategy Section) with a total area of 118,500 acres. Land allocations within this area include old forest (48%), spotted owl protected activity centers and home range core areas (17%) and goshawk (2%) protected activity centers and home range core areas, general forest (12%) and wildland urban interface threat (17%) and defense (2%) zones.

Land ownership includes approximately 101,000 acres of NFS lands and 17,500 acres of privately owned lands. One of our primary partners in this project is the Placer County Water Agency (PCWA). The entire watershed is of great significance to them because it is a primary water producer to their system which supplies water and power to millions of people. The economic and social value of this water to the State of California is beyond measure. The water supply infrastructure includes dams, diversion structures, and the distribution system downstream of the planning areas operated by the Placer County Water Agency (PCWA). Both watersheds are considered priority watersheds for the American River Ranger District and the Tahoe National Forest.

The project area also contains numerous dispersed and developed recreation sites and travel routes that provide a range of recreation opportunities. The visual character of these settings would benefit by improving and perpetuating attractive scenic quality as a result of the restorative efforts. Although the restoration efforts would likely result in short term (1-3 years) scenery disturbances that could be viewed by recreationists, proposed actions would help move toward more sustainable scenic character in the long term. Reducing tree densities and prescribed burning would help promote positive scenery attributes such as large tree character and mosaics of diverse conifer stands interspersed with meadows. The proposed actions would enhance views of existing naturally appearing landscapes, and positively affect the recreation experience. Fuels reduction and improved forest health will result in a more resilient forest landscape and reduce the likelihood of large-scale, stand-replacing wildfires, thereby protecting this invaluable resource for its many social, economic, and spiritual values.

The Middle Fork of the American River is a priority watershed for the ARRD. The watershed contributes to the municipal and industrial water supply to the greater Sacramento area, provides habitat for threatened, endangered and sensitive species, and is a host for many other valuable ecological and cultural resources. This landscape area, which is a key watershed in the larger California Bay Delta system, is identified in several watershed assessment reports to contain degraded ecological conditions. (American River (North and Middle Forks) Integrated Watershed Plan and Stewardship Strategy, 2002, Watershed Assessment for the Middle Fork American River, 2003, North Fork/Middle Fork American River Sediment Study, 2007, See

## The Middle Fork of the American River Restoration Project Proposed Treatment

Link on page 2 of Landscape Strategy). These assessments evaluate current resource conditions and provide restoration strategies for improving watershed health within this landscape area. The ecological restoration goals for the Middle Fork of the American River watershed are to:

- Reduce stand density to improve the forest's resilience to drought, insects, disease, wildfire; and other stressors associated with climate change.
- Protect and enhance habitat for Threatened, Endangered, and Sensitive species (TE&S), and for Management Indicator Species (MIS), both plant and animal;
- Increase the growth of trees to move the landscape toward old forest conditions;
- Decrease the potential for detrimental wildfire effects on a landscape level;
- Protect existing forest resources from the adverse effects of a large, severe wildfire;
- Operate and maintain the minimum road system necessary to provide sustainable access to Tahoe National Forest Lands for the administration, protection and utilization of those lands and resources;
- Enhance recreation opportunities and scenic quality.

The Middle Fork of the American River Restoration Project will begin with the Last Chance Project, which analyzed the North Fork of the Middle Fork of the American River watershed to develop forest stands more resilient to ecosystem disturbances. The Last Chance Project identifies immediate (FY2010) treatment opportunities on approximately 2,400 acres within this landscape. The project incorporates the ARRD Strategically Placed Land Area Treatment (SPLAT) strategy to locate treatment areas that most effectively modify wildfire behavior and provide wildlife habitat improvements. This strategy is designed to: reduce the likelihood of severe wildland fire effects on vegetation, soils, water, and wildlife habitat; establish and maintain a pattern of area treatments that are effective in modifying wildland fire behavior; reduce the risk of insect, pathogen, and drought related mortality; improve conifer and hardwood tree health, vigor, and resistance to fire, insects, and disease while enhancing stand structural diversity; enhance bear grass production for Native American weavers; and decommission unnecessary roads. A variety of management actions will be used to accomplish these restoration goals including: understory thinning; mechanical removal of ladder and surface fuels; prescribed burning; and road obliteration and erosion control. Forest Service stewardship contracting authority will be used as a cost-effective means to remove small diameter forest biomass and pay for transport of this biomass to nearby cogeneration power facilities. What makes this project unique is the third-party monitoring that is focused on this project. This project is part of the Sierra Nevada Adaptive Management Project (SNAMP) which is designed to evaluate the effects of forest thinning on the California spotted owl. Monitoring of various treatment effects and effects to the spotted owl will be accomplished by Forest Service managers and scientists and University of California which was designed in an open and collaborative process. The Forest

## The Middle Fork of the American River Restoration Project Proposed Treatment

Page | 3

Service will monitor wildlife, vegetation and stream habitat and SNAMP scientists will monitor fire effects, ecosystem health, wildlife species, water quality and quantity and public participation. The knowledge gained from this study will be used to inform management across the National Forests in the Sierra Nevada mountain range in an adaptive management framework (USDA Forest Service 2004).

In total there are eight projects located within the project area that have been identified on the 5-year plan (See Link on page 2 of Landscape Strategy section) in order to provide for ecological restoration across this broad landscape area. They are Last Chance and Western (2010), Deadwood (2011), French (2012), Big Oak and Pine Nut (2013), South Branch (2014) and Screwauger 2015. These projects will follow the strategy of Last Chance and involve the same collaborative partners. Within the landscape restoration area, the individual project planning areas encompass 65,000 acres of national forest system and private lands. Initial forest health improvement and fuels reduction treatments would include commercial thinning, prescribed burning, tractor piling and burning, mastication, and hand thinning, proven methods used successfully on other projects to improve ecological condition. Wherever possible, prescribed burning will be used as a follow up treatment to reduce surface and ladder fuels and to restore the ecological function of fire to the environment. In order to protect unique and irreplaceable values, project activities are not currently proposed in any areas of core biodiversity, remnant original forest ecosystems, roadless areas, or special areas of outstanding biological value. Project activities are designed around these features to afford them some protection and to reduce the threat of damage or loss from large and high severity wildfires. All of these projects will be designed to use the ARRD SPLAT strategy to locate treatment areas in places that balance the short-term effects of vegetation manipulation on existing resources with the long-term benefits of restoring forest resiliency to disturbances. We anticipate treating approximately 1,500 to 2,000 acres annually to be on a rate and pace of treatment that will meet the restoration goals for this area. Several of these projects will be specifically designed to focus on aquatic habitat, riparian area, reforestation and recreation enhancement treatments. Road management activities, especially decommissioning of unneeded roads, ensuring appropriate design and maintenance of existing roads and closing and rehabilitating any temporary roads, is a key component of the ecological restoration objectives in this landscape and are crucial to improving resource conditions in this watershed.

By designing integrated strategic treatments carefully placed across this landscape, all proposed projects under this proposal would reduce potential fire severity within this altered system, increase stand resilience in the event of a wildfire and increase stand vigor which will help reduce the threats of widespread insect and disease outbreaks. Ultimately, all of these outcomes are designed to promote the development and management of old forest habitat. To ensure these goals are met, monitoring will be conducted by Forest staff and collaborative partners and will be used to inform adjustments in the strategy or in project implementation. The Regional Ecology Program will continue to be used for project and landscape level monitoring that is beyond the expertise of Forest staff. Partner agencies, such as the Placer County Water Agency (PCWA) will also be monitoring long-term sediment movement and aquatic species and habitat.

# The Middle Fork of the American River Restoration Project

## Ecological Context

Page | 1

### Ecological Context

Given the importance of this priority project area, there is a need for active management to improve forest resiliency and restore ecological function. This will be accomplished by treating the current vegetation to restore ecologically appropriate vegetation structure and composition. This will positively influence the larger landscape disturbances of wildfire, insect and disease outbreaks related to possibly increasing periods of drought and temperature variation in a changing climate.

Five forest types are found within the area. Most of the area contains mixed conifer (53,653 acres/51%) and white fir (22,560 acres/22%) but there is also red fir (13,811 acres/13%) in the higher elevation portions of the watershed and a mixture of hardwoods (11,671 acres/11%) and mixed hardwood/conifer (2,582 acres/3%) spread throughout the lower elevations. Generally, the mixed conifer areas exist below 5,000 feet elevation and include ponderosa pine, incense cedar, white fir, Douglas fir, black oak and live oak. The lower one-third of southwest facing slopes and northeast facing slopes are considered moist, productive sites where shade tolerant species dominate the layers with white fir, Douglas fir and incense cedar being the most common. The upper two-thirds of southwest facing slopes and lower elevation ridge tops are considered dry, productive sites where currently white fir and incense cedar dominate. In both areas, sugar pine is prevalent and black oak occurs scattered or in large patches. The mixed conifer areas also contain hardwood-conifer forests that are dominated with oaks and scattered co-dominant conifers. These hardwood areas are typically found on shallow soils, on steep slopes or on large canyons and are important wildlife habitat types due to the abundant acorn crops from mature oaks. The White Fir/Red Fir types are generally found above 5,000 feet elevation and also have Sugar Pine intermixed.

Heavy impacts from human activities began during the California gold rush which started in Coloma on the nearby South Fork of the American River in 1849. Multiple decades of unsustainable practices such as complete fire exclusion, excessive livestock grazing, impacts from previous stand replacing wildfire, unmitigated placer mining, and historic logging practice such as selective logging of large pines, have contributed to altered fire regimes, heavy fuel loadings, and changed vegetation composition and structure. Although current practices are designed to be ecologically sustainable, the result of this century and a half of negative change, is a current forested landscape that is unstable, unsustainable, and therefore an undesirable departure from the historic ecologically rich landscape. The forest types listed above should be dominated by fire adapted/resistant species such as pine, but instead they have an unnaturally high component of fir and small diameter trees and brush. Fire regime and condition class mapping shows that 90% of this watershed has a severe or moderate departure from historic fire return intervals. As a result, the number, size, and intensity of wildfires have increased above their historical range and pose a threat to the landscape and human developments. The risk of loss of valuable resources, including wildlife habitat, high value trees, and hydrologic functioning as a result of wildfire is high. As an example, the 2001 Star Fire burned across approximately 16,500 acres within the project area. Within the burn perimeter, 3,606 acres experienced greater than 75% stand mortality. Another 4,000 acres experienced greater than 75% stand mortality in the next 3 years.

## The Middle Fork of the American River Restoration Project Ecological Context

Page | 2

There is a need to strategically apply appropriate, targeted silvicultural and fuels reduction treatments to accelerate the development of key habitat and old forest characteristics, increase stand heterogeneity, restore pine, promote hardwoods, and move project areas towards resilient conditions. If unmanaged stands and plantations remain untreated, bark beetles may infest dense stands and cause large scale, unacceptable losses that may interfere with management objectives and increase fire danger. This is especially likely given the periodic multi-year dry cycles that are typical in this part of California. Under restored forest conditions, a diverse range of vegetative conditions would provide ecological niches for survival and reproduction of many plant and animal species, increasing the richness of biodiversity over time. Forest stands growing at appropriate densities, with diverse species composition, will be better suited to support opportunities for ecological adaptation in response to a changing climate and enhance the Forest's opportunity to provide a variety of ecosystem services.

There are over twenty federally listed or sensitive wildlife species that have been sighted or have suitable habitat within this watershed. Most notably, the California red-legged frog, a federally listed threatened species, occurs in this watershed. Several species dependent upon living old growth forest conditions such as the California spotted owl and northern goshawk also occur here. Other species, such as mule deer, mountain quail and a variety of songbirds are dependent upon the fire-dependent chaparral and hardwood and more open hardwood/conifer forests that are being encroached upon by conifers. Fuels reduction and ecological restoration projects that are designed to restore desired vegetation characteristics and reduce the likelihood of large, high-intensity wildfires, have direct and indirect benefits to terrestrial and aquatic wildlife species.

In addition to providing clean and cold water for downstream human uses, the waters of the project area provide habitat for a variety of native resident fish species and multitude of other aquatic organisms. Intact riparian areas provide fish with good water quality, food, and necessary habitats for all life stages of their life cycles. The abundant and diverse plant communities of intact riparian areas help ensure a source of water low in suspended sediments and turbidity. High intensity wildfire can cause fine sediments to be deposited in fish spawning areas that can kill eggs and emerging fry and affect aquatic macro invertebrates. The proposed fuels and vegetation management treatments are designed to influence the patterns of fire severity when a wildfire occurs in this area so that riparian plant communities may have a higher survival rate to minimize the effects on the aquatic ecosystem.

Because of the significance of the aquatic ecosystem, both for terrestrial and aquatic wildlife and for human uses, one of the most important considerations in project planning is to ensure intact and functioning riparian areas. Management in Riparian Conservation Areas (RCAs) is designed to meet Riparian Conservation Objectives (RCOs) and Aquatic Management Strategy (AMS) goals. The intent of management direction for RCAs is to (1) preserve, enhance, and restore habitat for riparian- and aquatic-dependent species; (2) ensure that water quality is maintained or restored; (3) enhance habitat conservation for species associated with the transition zone between upslope and riparian areas; and (4) provide greater connectivity within the watershed. Projects that propose activities in RCAs enhance or maintain the physical and biological characteristics of the RCA. This helps the Forest meet its ecological services obligation by balancing ecological uses of the water while on the Forest with human social and economic uses of the water once it leaves the Forest.

## The Middle Fork of the American River Restoration Project Ecological Context

Page | 3

One of the greatest threats to water quality and supply and to water delivery infrastructure is severe wildland fire. This type of fire in the Middle Fork of the American River watershed could result in an increase in peak streamflows and the potential increase in erosion rates and sediment delivery downstream after the fire. The increased peak flow, along with the bulking effect of increased floatable debris, sediment, and turbidity, could have the potential to fill reservoirs, block or damage diversion structures, and block water intake facilities. The magnitude of the potential disruption, is dependent on several factors such as the amount and location of high soil burn severity, steepness of slopes burned, soil depth and percent rock content, vegetation type, hydrophobic soil depth, and precipitation intensity. These potential results from a wildland fire could disrupt municipal water supplies which would have devastating social and economic impacts if it coincided with a period of drought and already shortened water supplies. Proposed treatments are designed to reduce the risk of severe wildland fire.

The Forest Service is the primary manager of all of the roads in the watershed. Current road maintenance emphasis is on safety and upkeep on the arterial roads, collector roads and high-use local roads (e.g., roads accessing recreational sites). Given existing recent budgets and priorities, local roads in this area generally receive only custodial care and repairs are only done to correct problems causing resource damage. There are approximately 642 miles of roads in the watershed. About 147 miles have aggregate surfaces and approximately 483 miles are native surface roads. The Forest Service conducts routine evaluations of the current road management objectives in which non-routine maintenance and road maintenance levels are identified. Where non-routine maintenance is identified, opportunities to address them are typically in association with fuels or vegetation management activities due to the high cost of these maintenance needs. The implementation of the projects in the project area, augmented by funding from the CFLR Program would allow for more road maintenance and increased mitigation of potential hydrological problems to occur in association with the fuels and vegetation treatments for ecological restoration. All temporary roads will be closed and rehabilitated as part of this project.

Fires have the potential to cause substantial damage to roads and related structures. Impacts typically include damage to culvert ends, elimination of water bars, dips and other drainage structures, damage to asphalt surfacing, burning of woody debris that undermines fill slopes and road prisms, falling debris on roadways and damaged gates and barricades. The proposed activities would help minimize those effects.

Many noxious weeds are found in the watershed. Active management of noxious weeds to prevent their activity-related spread and to contain and control existing population is a critical component of all projects. Implementing the projects in this proposal offers an opportunity to work with partners and collaborators to design and implement interagency and public strategies to deal with the spread of noxious weeds. It will take action by all parties including private landowners and the public for any noxious weed management strategy to be successful. The projects in this proposal and the emphasis this watershed would receive with CFLR funding, would allow it to serve as a showcase for integrated, collaborative noxious weed management.

# The Middle Fork of the American River Restoration Project Collaboration

## Collaboration

### Previous Collaborative Efforts

Strong partnership collaboration has occurred throughout much of this landscape area for many years. Placer County, Placer County Water Agency (PCWA), the Sierra Nevada Adaptive Management Project (SNAMP), American River Watershed Group (ARWG), Placer County Fire Alliance and local fire safe councils have been actively engaged with the ARRD in various projects within this area.

For example, The Placer County Air Control Pollution District has funded biomass operations from forest fuels reduction projects over the past two years. Through direct contributions of \$100,000 per year to the Forest, we have supported the removal of large woody debris piles generated from forest fuels reduction projects. This partnership has enabled the Forest to contribute to green energy production while reducing air pollutant emissions.

PCWA has been a long-term partner in the management of the American River Watershed. This agency controls hydropower generation facilities along approximately 20 miles of the Middle Fork American River and contributes to the conservation and control of water. PCWA is an active participant in our local watershed groups and has contributed to numerous discussions on improving watershed health, and increasing forest resilience to wildfire and pathogens. PCWA partnered with the Forest to produce a watershed assessment of the Middle Fork American River in 2003. This assessment analyzed the current conditions of resources and determined opportunities for management and restoration. This has been a key document in guiding management actions in this watershed. PCWA is currently in their Federal Energy Regulatory Commission (FERC) relicensing process. Through this process the District is working with PCWA to identify vegetation, habitat and watershed health management actions and financial support PCWA will provide for these actions within the FERC boundary contained in this watershed. PCWA has also expressed interest in providing support for monitoring and funding of Forest projects that help meet its watershed goals of forest resilience, water quality enhancement and species habitat improvement in the upper sections of the landscape within the project area.

SNAMP was established in 2005 to develop, test and implement the Sierra Nevada Forest Plan Amendment (SNFPA) Adaptive Management Strategy. SNAMP is a unique collaboration among Federal and State agencies, the University of California and the public. A MOU is in place that develops the framework for this collaboration. The Last Chance planning area, which is within the CFLR landscape area, was selected by SNAMP as one landscape area to develop and implement the application of an adaptive management process. University of California scientists are conducting research and public outreach to solicit input in the development of this process. This collaboration brings broader agreements in fuels reduction strategies while protecting important watershed resources. This partnership has secured funding for the SNAMP science teams to implement forest health, threatened and endangered wildlife habitat and water quality and quantity monitoring strategies within the Last Chance planning area. Past annual funding for these activities from the California Department of Water Resources, California Department of Fish and Game and the Sierra Nevada Conservancy has ranged from \$500,000 to \$700,000. A one-time grant from the Packard Foundation for \$150,000 was awarded to SNAMP in 2008 to further scientific monitoring of fuels reduction treatments. SNAMP has also secured funding to

## The Middle Fork of the American River Restoration Project Collaboration

Page | 2

increase the public participation processes and stakeholder involvement in SNAMP through regular public meetings and reporting, public outreach, and an interactive website. Funding through the 2015 fiscal year in the amount of \$500,000 per year has been secured from partners for further monitoring and public outreach and to develop the adaptive management strategy.

The ARWG is a broad based group with representatives from the Tahoe and Eldorado National Forests, Placer County, Natural Resources Conservation Service, PCWA, state agencies, environmental groups and private land owners. This group has collaborated on several grant proposals to fund on the ground watershed restoration projects within the Middle Fork American River watershed. Grant funding was secured that contributed to fuel reduction activities including fuel break creation around communities at risk to wildfire. The ARWG also secured funding for a risk assessment to determine sedimentation issues and identify solutions for these issues through active forest management within the Middle Fork landscape area. Education and outreach projects were conducted in local communities to further explain and demonstrate fuel reduction needs/projects in the communities.

### **Ongoing and Future Collaboration**

All of these partners have committed to further collaboration with the Tahoe within this landscape area. The TNF will continue to work with these partners and explore other partnership opportunities to seek funding to meet mutual watershed restoration goals and for continued education on fuel reduction needs in and around private property. The SNAMP program will continue to share the findings of the studies being conducted in the Last Chance project.

Collaboration will continue with communities in Foresthill, Michigan Bluff and others. The Director of the FireSafe Council of Foresthill has recently emphasized the need for watershed restoration and fuel reduction for the Middle Fork Rim. “We need to emphasize the health of the Middle Fork watershed as the communities of Foresthill, Todd Valley and Michigan Bluff sit at the top of the Middle Fork plateau. What happens upstream in the watershed as well as directly below us in the canyon has a direct affect on Foresthill and Todd Valley,” stated Luana Dowling, Director of the Firesafe Council. The Forest Service will continue to participate with the FireSafe Council of Foresthill and the Placer County Fire Alliance and in various community events to emphasize the importance of watershed restoration and fuel reduction programs.

In addition, the Nevada/Placer Resource Advisory Committee was recently appointed by the Secretary of Agriculture. Watershed restoration and fuel reduction projects east of Foresthill in the Middle Fork watershed are being developed and will be presented for possible RAC funding. Communication and collaboration will continue to take place formally and informally with other agencies, key community leaders, interest groups, and the public.

Jim Sedell with the National Fish and Wildlife Foundation stated recently (May 7, 2010) that his organization would be glad to be listed as a future partner in this project. They have a Sierra Meadow Initiative and currently have a number of funding requests from the Tahoe NF for meadow work and are sure they will be a partner in some way in support for this proposal.

# The Middle Fork of the American River Restoration Project

## Wildfire

Page | 1

### Wildfire

Recent research has concluded that forest wildfires in the western United States are becoming larger, more frequent, and more disruptive to forest resources, including wildlife habitat and water quality. A large area (approximately 29.6 million acres) of California and Western Nevada experienced a notable increase in the extent of forest stand-replacing “high severity” fire between 1984 and 2006. Mean and maximum fire size, and the area burned annually have also risen substantially since the beginning of the 1980s, and are now at or above values from the decades preceding the 1940s, when fire suppression became national policy (Miller et al 2009). While all wildfires produce a mixture of intensities and severities, under present conditions fires that escape initial attack within the Middle Fork American River watershed are expected to produce intensity and rate of spread rates that exceed the capabilities of fire suppression resources. An indication that future wildfires will burn more intensely and severely under present conditions than historic fires is the departure from the mean fire return intervals found within the watershed. Historically, most of the watershed had a mean historic fire return interval (FRI) of 10-15 years in lower elevations, and 32-50 years within the upper elevations. The Tahoe National Forest Historic Reference Condition Mapping shows a majority of the watershed is greater than 67% departed (less fire frequency and greater fire severity) from the historic mean FRI (Safford 2007).

“Uncharacteristic” wildfire is defined as greater than 33% departed (less fire frequency and greater fire severity) from the of historic mean pre-settlement fire return interval. The Tahoe National Forest Fire Management Plan requires all wildfires be fully controlled using “appropriate” suppression action(s) (TNF 2010). Where wildfire intensities or firefighter safety considerations preclude direct attack with ground forces, indirect tactics, heavy equipment and aircraft would be utilized. Fire size, resource damage levels (including suppression actions), suppression costs, and restoration time and expense all increase with increased fire intensities. Completed fuel treatments have proven to be effective modifiers of high severity fire behavior, changing crown fires to surface fires, reducing stand mortality, and presenting opportunities for wildfire containment and control. (Fites 2007, Safford 2007, 2008). Strategically Placed Land Area Treatments (SPLATS) can theoretically reduce wildfire rates of spread beyond treated areas, reducing the impacts of uncharacteristically severe fires (Finney 1999). Future projects will include fuels treatments along ridge tops and areas of high fuel density. Areas where departure from the historic mean fire return interval is highest will be identified and given priority consideration for treatment. We will use the methods proposed in North, M. et al. (2009) An ecosystem management strategy for Sierran mixed-conifer forests. PSW-GTR-220. USDA Forest Service, Pacific Southwest Research Station, Berkeley, CA to design treatments that use local ecological heterogeneity to guide the nature and intensity of fuel treatments. Treatments may include commercial and pre-commercial thinning, mastication, piling and chipping, biomass utilization, prescribed burning, or a combination of these. Prescribed burning only treatments will be considered in areas where mechanical treatments are not practical or economically feasible. The proposed treatments will target approximately 40% of the watershed for maximum effect and as much as possible be strategically placed across the watershed.

The proposed future projects will establish areas that are resistant to growing wildfire threats. Historic fire return intervals will be referenced to plan future fuels treatments designed to

## The Middle Fork of the American River Restoration Project Wildfire

Page | 2

maintain the landscape in a resilient, fire inclusive condition. Prescribed fire will be applied in a cycle that approximates historic fire return intervals. The natural fire regime must be reestablished through systematic fuel modification projects before natural fires could be allowed to burn under any conditions within the watershed.

After the treatments have been completed, the anticipated fire behavior will resemble those found historically within the watershed. Based on fire history studies, the watershed had a fire regime of frequent mostly low intensity fires, with occasional patches of moderate to high intensity fires (Safford 2007). In restored conditions, wildfires within the watershed should produce lower fire intensities and rates of spread under higher fire danger conditions. This will allow more flexibility in fire management tactics, strategies, and objectives.

High watershed values, critical wildlife habitat, and unique features (the Placer Grove of giant sequoias) necessitate that wildfires continue to be fully controlled in the most rapid, safest and most cost effective manner, even in the restored landscape. Instances of successful initial attack and rapid control of fires are expected to increase. Greater landscape fire resilience, less intense/severe fires, and greater flexibility in future fire management options will reduce the costs of suppression, burned area recovery, and fire rehabilitation.

Communities located near the Middle Fork American River watershed include Foresthill, Michigan Bluff and Georgetown. Fuel treatments in the Middle Fork watershed, while not directly incorporating these communities, would complement local community wildfire protection plans and enhance their effectiveness. The watershed also contains a significant water management and electrical production infrastructure owned and operated by the Placer County Water Agency and Placer County. This watershed is a vital component in meeting California's water and power demands. The proposed projects would enhance the resilience of this resource.

There is an urgent and immediate need to address the excessive cost of large fires. A recent research study of large wildland fire suppression expenditures by the Forest Service suggest that fire size and private land have the strongest effect on suppression expenditures. (Liang et al 2008). Efforts to contain federal suppression expenditures need to focus on the highly complex, politically sensitive topic of wildfires on private land, and the ability of fire management resources to contain fire size. Since approximately 15% of the proposed project area is non federal land, and no communities fall within those private holdings, the greatest opportunity to reduce suppression costs lies in reducing fire size. Wildfire Decision Support System (WFDSS) computer simulations suggest the average wildfire size for an "untreated" watershed to be 3,300 acres; compared to "treated" watershed, 1,200 acres (a reduction in fire size of over 60%). Suppression costs for a 4000 acre wildfire in an untreated watershed are estimated at \$600 per acre. Strategically placed area treatments could not only reduce fire size, but modify fire behavior and suppression cost. Suppression costs for a similar wildfire in a treated watershed are estimated at \$300 per acre (A cost savings of approximately \$1,000,000), (Bowden 2010).

**The Middle Fork of the American River Restoration Project  
Utilization**

**Utilization**

Tremendous opportunity exists within the CFLR landscape area to utilize small diameter woody biomass from forest treatment activities to generate renewable energy and displace energy production from fossil fuels. The District has a long history of using stewardship contracting authority to remove small diameter woody biomass during restoration and hazardous fuel reduction treatments and supplying biomass to cogeneration power facilities located in Lincoln and Woodland California.

Heavy biomass accumulations exist within the project area. These overcrowded forests have resulted in declining forest health and increasing fire hazards. Restoration treatments focused on the removal of small diameter trees and woody biomass would significantly reduce this fire hazard while enhancing water, soil and wildlife habitat characteristics and overall forest health. Based on our forest inventory analysis of the Last Chance Stewardship project (FY 2010), the estimated output of biomass products is approximately 7 million board feet. This would generate approximately 70,000 green tons of material.

The long term biomass capability in the CFLR landscape area of small tree material is approximately 2,000 to 5,000 board feet/acre (10 Green Tons/Acre to 25 Green Tons/Acre equivalent). The Project Area is about 118,000 and 39,550 acres of that is Treatable ground (See the Table below). Of those 39,550 acres we estimate an annual treatment capability of approximately 2,000 acres, which would equate to approximately 20 to 50 thousand green tons of material per year. Specific project analyses of funding, operational and ecological constraints will determine the exact number of treated acres each year.

**TAHOE NATIONAL FOREST CFLR BIOMASS CAPABILITY**

Project area	118,000 acres
Treatable ground	39,550 acres <u>1/</u>
Small stem removal	2mbf – 5mbf/acre <u>2/</u>
Priority ecological treatment for 10 yrs	3,955 acres/year <u>3/</u>
<u>1/</u> Slopes less than 30%, non-wilderness, non-PAC/SOHA, Wild and Scenic River, Based on SNAMP Collaborative IDT conversation at Last Chance Project meeting. Available treatable land base approx. 30-35%.	
<u>2/</u> Last Chance Stewardship small stem (biomass) volume approx. 5mbf/acre.	
<u>3/</u> See TNF Integrated Fuels/Vegetation 5 Year Planning Map.	

Based on current practices, small material (biomass) would be treated simultaneously with saw logs using mechanical harvesting equipment. Biomass material ranging between 4 inch DBH to 9 inch DBH would be cut, stacked and skidded to log landings in bundles with sawlog material. Effective utilization and removal as described above lowers logging costs, meets multiple resource objectives, provides a greater return on investments and treats more acres than otherwise would be realized. This type of mechanized thinning will reduce ladder fuels and tree densities by removing understory trees greater than 4 inches diameter. Sawlog material (10” DBH and larger) will be delivered to local sawmills to process into lumber. Mill waste is converted to secondary products. Small material (biomass) will be processed at the landing and

## **The Middle Fork of the American River Restoration Project Utilization**

Page | 2

removed as chips for use as fuel at electrical production facilities such as the Sierra Pacific Industries, cogeneration facility at Lincoln, California, or to other facilities for processing into a variety of products.

Generally, the biomass resource available in our region is underutilized. Under current economic conditions appraisals show negative values for biomass removal (In other words: The biomass has some value but the cost of removal is greater than its value). In order to remove the material incentives must be added. Added value product such as sawtimber, in combination with additional appropriated funds, will help pay for the excess costs of biomass removal. As additional uses for biomass develop and demand increases in coming years, biomass prices may go up, further offsetting removal costs. Timing is very important in managing the costs of biomass removal. The cost to treat one vegetation strata (biomass) is much more expensive than treatment simultaneous with the removal of products of value (sawtimber).

## The Middle Fork of the American River Restoration Project Investments

### Investments

The TNF is committed to allocating appropriated funds for restoring the watershed conditions in the Middle Fork watershed. The ARRD plans to invest about \$285,000 of appropriated funds for implementation of fuels reduction work in the project area in FY 2010 (See Funding Estimate in Section 7). An additional estimated \$45,000 in stewardship contract Product Value funding will also be available in FY 2010 for biomass removal. If appropriated funds remain at or above the current levels, the TNF is committed to this allocation in the future. It is also anticipated that increases in future timber values will provide more funds for biomass removal through stewardship contracting authority.

Investments will continue through SNAMP for implementation and monitoring of the Last Chance fuels reduction project. The Region 5 Regional Office is committed to continue funding of approximately \$500,000 through FY 2015. Additionally, our non-federal partners in the SNAMP efforts are also committed to approximately \$500,000 through FY 2015. While this funding is targeted to a specific location within the Middle Fork, the scientific learning and adaptive management strategy will provide current, state of the art, science and scientific tools for our ecological restoration strategies.

Non-federal investments will also continue for implantation of restoration treatments. Placer County Air Control Pollution District will continue with approximately \$100,000 per year for biomass removal with the projects. We also anticipate PCWA to contribute funding though their FERC relicensing project and outside this project to further restoration treatments that reduce wildfire and sedimentation and increase aquatic habitat and water quality. Continued private land management will also enhance our projects. Sierra Pacific Industries (SPI) manages about 4,000 acres within this watershed. While not a direct funding contributor to land management on NFS lands, SPI supports and actively participates in our land management to further our shared restoration goals.

With the downturn in the economy over the last year, small rural communities with ties to forest management, including Foresthill, have experienced a significant loss in forest sector jobs. With CFLR funding, the ARRD will directly increase job opportunities within the local communities of Foresthill and Auburn. Contractors not only provide local employment, but have the capability to deliver additional resources to meet a larger demand for restoration treatments. This equates to increased job opportunities. This funding could also provide more job opportunities in the green sector of power generation. The increase and consistent delivery of woody biomass over the next ten years may increase cogeneration power facility operations. The cogeneration power plants in Lincoln, CA and Woodland, CA have indicated a need for additional forest biomass for their plants.

This project, if funded, will also benefit the Foresthill Fire Safe Council and Placer County Fire Safe Alliance. The Council and Alliance will tier from our strategies and treatments to projects identified in their Community Wildfire Protection Plan. Through are strong relationship with these entities, we can both better compete and leverage additional funding opportunities to reduce the effects of catastrophic wildfire on our forest resources and better protect the communities at risk for large catastrophic wildfires.

## **The Middle Fork of the American River Restoration Project Investments**

Page | 2

Based on current planning, equivalent or larger amounts of funding from all sources will be invested in each of the next 5 years. The result of these investments will be to increase the ecological resilience of the landscape, and provide jobs through local businesses. Past experience with stewardship contracting indicates operational costs decrease due to the efficiencies of removing cost and value products at the same time. The American River District has a strong track record of working with America Corps and will be developing plans to provide employment/training opportunities to the Corps.

**The Middle Fork of the American River Restoration Project  
Funding Estimate**

**Funding Estimate**

Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2010 to match funding from the Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2010 Funding Type	Dollars/Value Planned
FY 2010 Funding for Implementation	\$474,000.00
FY 2010 Funding for Monitoring	\$100,000.00
1. USFS Appropriated Funds	\$284,800.00
2. USFS Permanent & Trust Funds	0
3. Partnership Funds Placer County Air Pollution Control	\$145,000.00
4. Partnership In-Kind Services Value: SNAMP	\$500,000.00
5. Estimated Forest Product Value	\$45,000.00
6. Other (specify)	0
FY 2010 Total (total of 1-6 above for matching CFLRP request)	\$974,800.00
FY 2010 CFLRP request (must be equal to or less than above total)	\$430,000.00
Funding off NFS lands associated with proposal in FY 2010 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 20xx Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	
Private Funding	

Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2011 to match funding from the Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2011 Funding Type	Dollars/Value Planned
FY 2011 Funding for Implementation	\$625,000.00
FY 2011 Funding for Monitoring	\$19,287.00
1. USFS Appropriated Funds	\$200,000.00
2. USFS Permanent & Trust Funds	0
3. Partnership Funds	\$200,000.00
4. Partnership In-Kind Services Value: SNAMP	\$500,000.00
5. Estimated Forest Product Value	\$75,000.00
6. Other (specify) Secure Rural School Program, Title II Funds	\$50,000.00
FY 2011 Total (total of 1-6 above for matching CFLRP request)	\$1,025,000.00
FY 2011 CFLRP request (must be equal to or less than above total)	\$600,000.00
Funding off NFS lands associated with proposal in FY 2010 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 20xx Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	
Private Funding	

**The Middle Fork of the American River Restoration Project  
Funding Estimate**

Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2012 to match funding from the Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2012 Funding Type	Dollars/Value Planned
FY 2012 Funding for Implementation	\$670,000.00
FY 2012 Funding for Monitoring	\$19,866.00
1. USFS Appropriated Funds	\$200,000.00
2. USFS Permanent & Trust Funds	0
3. Partnership Funds	\$220,000.00
4. Partnership In-Kind Services Value: SNAMP	\$500,000.00
5. Estimated Forest Product Value	\$100,000.00
6. Other (specify) Secure Rural School Program, Title II Funds	\$50,000.00
FY 2012 Total (total of 1-6 above for matching CFLRP request)	\$1,070,000.00
FY 2012 CFLRP request (must be equal to or less than above total)	\$620,000.00
Funding off NFS lands associated with proposal in FY 2010 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 20xx Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	
Private Funding	

Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2013 to match funding from the Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2013 Funding Type	Dollars/Value Planned
FY 2013 Funding for Implementation	\$595,000.00
FY 2013 Funding for Monitoring	\$20,462.00
1. USFS Appropriated Funds	\$200,000.00
2. USFS Permanent & Trust Funds	0
3. Partnership Funds	\$100,000.00
4. Partnership In-Kind Services Value: SNAMP	\$500,000.00
5. Estimated Forest Product Value	\$100,000.00
6. Other (specify) Secure Rural School Program, Title II Funds	\$75,000.00
FY 2013 Total (total of 1-6 above for matching CFLRP request)	\$975,000.00
FY 2013 CFLRP request (must be equal to or less than above total)	\$650,000.00
Funding off NFS lands associated with proposal in FY 2010 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 20xx Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	
Private Funding	

**The Middle Fork of the American River Restoration Project  
Funding Estimate**

Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2014 to match funding from the Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2014 Funding Type	Dollars/Value Planned
FY 2014 Funding for Implementation	\$595,000.00
FY 2014 Funding for Monitoring	\$20,462.00
1. USFS Appropriated Funds	\$200,000.00
2. USFS Permanent & Trust Funds	0
3. Partnership Funds PCWA	\$100,000.00
4. Partnership In-Kind Services Value: SNAMP	\$500,000.00
5. Estimated Forest Product Value	\$100,000.00
6. Other (specify) Secure Rural School Program, Title II Funds	\$75,000.00
FY 2014 Total (total of 1-6 above for matching CFLRP request)	\$975,000.00
FY 2014 CFLRP request (must be equal to or less than above total)	\$650,000.00
Funding off NFS lands associated with proposal in FY 2010 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 20xx Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	
Private Funding	

Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2015 to match funding from the Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2015 Funding Type	Dollars/Value Planned
FY 2015 Funding for Implementation	\$595,000.00
FY 2015 Funding for Monitoring	\$20,462.00
1. USFS Appropriated Funds	\$200,000.00
2. USFS Permanent & Trust Funds	0
3. Partnership Funds	\$100,000.00
4. Partnership In-Kind Services Value: SNAMP	\$500,000.00
5. Estimated Forest Product Value	\$100,000.00
6. Other (specify) Secure Rural School Program, Title II Funds	\$75,000.00
FY 2015 Total (total of 1-6 above for matching CFLRP request)	\$975,000.00
FY 2015 CFLRP request (must be equal to or less than above total)	\$650,000.00
Funding off NFS lands associated with proposal in FY 2010 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 20xx Funding Type	Dollars Planned
USDI BLM Funds	
USDI (other) Funds	
Other Public Funding	
Private Funding	

**The Middle Fork of the American River Restoration Project  
Funding Plan**

Page | **1**

**Funding Plan**

R5 has stated its intention to provide adequate funding for CFLR projects for planning, implementation and monitoring. CFLR funds appropriated in FY 2010 and 2011 will be used for ecological restoration treatments in those fiscal years.

# The Middle Fork of the American River Restoration Project

## Landscape Strategy

Page | 1

### Landscape Strategy

The landscape strategy for the Middle Fork American River CFLR Project was developed in two documents: The “*Middle Fork of the American River Watershed Assessment*” and the “*North Fork/Middle Fork American River Sediment Study*”. A collaborative approach was identified in these documents as being critical in this watershed because of the complex mixed ownership and multiple-use management challenges: “Resource and land managers in NF/MFAR watershed face a number of strategic challenges, including: 1) management across a hierarchy of scales; (2) management across a diverse set of land-use types; and (3) management across a diverse set of public and private land ownerships.” (Sediment study executive summary). The CFLR proposed project would maintain/restore forest functionality (the ecological processes, goods, and services that the Middle Fork of the American River can provide at the landscape scale).

Both of these documents were part of the Forest Service’s collaborative planning efforts with American River Watershed Group, other government agencies, educational institutions and private parties with interests in the Middle Fork of the American River. The Middle Fork American River Watershed Analysis was written by the American River Ranger District, after the American River Watershed Group identified the issues and concerns within the watershed. The needs and opportunities identified in Chapter 5 of the Watershed Analysis were fire/fuels management, MFAR Water Project and management, Recreation, and Other Resource projects. The recommended long-term fuels management strategy is to manage the extent of high severity of fire by implementing the SPLAT strategy throughout the watershed. “Protection of the watershed from catastrophic wildfire is important to protect the urban-intermix areas as well as the facilities of the MFAR Project. Also, wildfire is a significant cause of sedimentation in many areas and high level of sediment to the MFAR would be detrimental to water quality and the operations of the MFAR Project.” Effects of high severity fire across the landscape could also disrupt municipal water supplies. Sediment production associated with roads and recreation was also identified as being a potential issue.

Because sediment was identified as a significant potential issue within the watershed, the American River Sediment Study was produced. The study used a coarse scale model to evaluate the potential for soil erosion and sediment delivery to streams in the watershed and to prioritize watersheds which could cause adverse impacts on “key resources (aquatic organisms and habitat, water and power infrastructure, and water quality) for restoration. The report did find that “sediment-related water quality does not appear to be a major concern, except in localized areas” (page 9, executive summary).

The Sediment Study recommends two strategies to protect key resources: protection by maintaining watershed functions (disturbance minimization) and enhancing watershed functions (active restoration). Both analyses recommend sediment control actions to restore localized watershed issues, road management, and fire/fuels management to manage the potential sediment production from high severity wildfire.

As previously stated, this project proposal synthesizes the Last Chance Project which analyzed the North Fork of the Middle Fork of the American River watershed (55,000 acres), the District wide SPLAT strategy, the District 5 yr plan (see attachment), the Tahoe National Forest Historic

**The Middle Fork of the American River Restoration Project  
Landscape Strategy**

Reference Condition Mapping (Safford 2007), and the stated interest of the PCWA in management of the two watersheds.

The documents, 5 year plan spreadsheet and map can be viewed using these links:

[http://fsweb-legacy.tahoe.r5.fs.fed.us/postings/CFLR/MFP\\_WAA.pdf](http://fsweb-legacy.tahoe.r5.fs.fed.us/postings/CFLR/MFP_WAA.pdf)

[http://fsweb-legacy.tahoe.r5.fs.fed.us/postings/CFLR/NFMAR\\_Sediment\\_Study\\_Final\\_Report.pdf](http://fsweb-legacy.tahoe.r5.fs.fed.us/postings/CFLR/NFMAR_Sediment_Study_Final_Report.pdf)

[http://fsweb-legacy.tahoe.r5.fs.fed.us/postings/CFLR/ARRD\\_CFLR\\_Map.pdf](http://fsweb-legacy.tahoe.r5.fs.fed.us/postings/CFLR/ARRD_CFLR_Map.pdf)

[http://fsweb-legacy.tahoe.r5.fs.fed.us/postings/CFLR/ARRD\\_5\\_YR\\_Plan\\_4\\_28\\_10.xlsx](http://fsweb-legacy.tahoe.r5.fs.fed.us/postings/CFLR/ARRD_5_YR_Plan_4_28_10.xlsx)