

# Best Management Practices for Black Forest Restoration 2013

[www.blackforesttogether.org](http://www.blackforesttogether.org)

**Tragedy and Opportunity** The 2013 fire took a heavy toll on the central forested area and the human community embedded in it, but it will diversify age classes and forest structure in the burn mosaic, creating a new paradigm for the Black Forest of the future.

**Mitigation** Unburned areas encircle the burned central core of the Forest. and there are unburned and scorched areas within the burned area. These remain at extreme risk for fire.



**Sustainability** The mosaic of interspersed burned and unburned areas of forest and meadow must function together for a sustainable Black Forest ecosystem. Immediate post-fire recovery needs to be done using Best Management Practices so that the future integrity of Black Forest ecosystems receives the least damage from efforts to remove blackened and scorched trees.

**Black Forest Together** has a Forest Recovery Team composed of citizens, private sector experts, and government agency advisors. We are creating a suite of Best Management Practices (BMP's) for mitigated, restored and sustainable ecosystems in Black Forest.



See Forest Restoration Pages at:  
[www.blackforesttogether.org](http://www.blackforesttogether.org)  
**Black Forest Together**  
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# Best Management Practices for Black Forest

**This brochure is the beginning** of an ongoing effort to create broad-based **Best Management Practices** Options for Black Forest.

**Initial efforts will provide** articles, links on the Black Forest Together Website, and related handouts such as this brochure.

**It is an integrated and cooperative effort** to provide landowners with current and actionable information on erosion control, fuel reduction, landscape management of native ecosystems, forest health and noxious weed information, and options for forest restoration of both burned and unburned landscapes.



**Best Management Practices (BMP's)** began in the mid-1970s after the Environmental Protection and Clean Water Acts were passed by Congress.

**BMPs apply to protective and efficient management of natural resources of all types.** They have been extensively developed for forestry, logging, storm water, erosion control, storm and wastewater management and many other land-affecting activities in all types of ecosystems.

**Black Forest Best Management Practices** assembled by the Black Forest Together Recovery Team will focus on the healthy restoration and sustainability of Black Forest's native ecosystems.

**Action and Inaction both have consequences.**

**Understanding Best Management Practices for your property is essential to a future healthy forest.**

# Erosion Control

**Erosion increases** where vegetated land surfaces are disturbed by vegetation removal due to fire, mechanical disturbance by machinery or grazing animals. Usually, erosion refers to movement of sediment but in burned areas may also include movement of debris, char and ash.

**Upper watersheds** of East and West Black Squirrel Creek, Kettle Creek and Kiowa Creek, radiating from the Palmer Divide received the heaviest burn impacts. Erosion control measures are critical to retain precious soil and protect downstream areas.

**Sediment retention and slowing of storm runoff** are recommended for hillslopes, swales, gullies, ravines, and sloped driveways. The same erosion control techniques apply to burned and unburned areas.

**Hillslope protection** is needed on burned areas, whether trees are removed immediately or later, as well as many green areas.

**Contour felling of smaller trees** and leaving some branches for “roughness”, and construction of small check dam in swales using straw wattles, tree trunks, or straw bales depending on size needed, are helpful. **Detailed information on erosion control methods** are available on websites of the Natural Resource Conservation Service (NRCS), many State Highway and Natural Resources Departments as well as USDA Forest Service, State Forest Service and professional forestry organizations.



**Contour felling of small diameter trees on slopes, and tree trunks and straw bales in swales are inexpensive and effective erosion controls.**

# Mitigation

**Continued fuel reduction** (mitigation) of all sizes of trees needs to continue at an accelerated pace in unburned areas to reduce the risk of additional destruction from wildfires.

**Unburned areas will continue to be at high risk** once the monsoon rains stop and the landscape becomes dry again.

**Hazard burned trees should be removed, as a priority along roads, beneath powerlines and near buildings.**

**Green trees should also be removed along roads and under power lines. Rampant regeneration (young trees called “doghair pines”) should be heavily thinned for fuel reduction.** Clusters of larger trees with significant space between the clusters provides better habitat for Abert squirrels and is safer from crown fire than even spacing with small gaps between trees. Clustering is a more natural pattern than even spacing.

**Immediate voluntary landowner fuel reduction** beneath utility lines, in road ROW's and near buildings is crucial. This is an essential part of the Black Forest's 2007 **Community Wildfire Protection Plan.**

**Scorched trees occur in moderate and light burn areas, and may survive.** Some scorched trees are now hazardous because of position (near driveways, roads or buildings); others because of physical fire

damage to the trunk or limbs o causes weakness which may result in limb failure or all or part of the tree falling.

**Thinning of trees creates a healthier, safer forest.**

Because Black Forest does not have frequent, low burning fires, and grazing has been removed from most of the landscape since WWII, pine regeneration has caused Black Forest to become severely overgrown - setting the stage for catastrophic fire.

**By removing crowded trees that do not receive enough sunlight,** remaining trees will grow wider and taller. These healthier trees will better withstand drought and fire.



# Burned Tree Removal

**Blackened trees** are common in severe burn areas. **Scorched trees** occur in moderate and light burn areas. Blackened trees are dead; some scorched trees may survive.

**Choices must be made** among immediate removal vs. phased removal; hand-felling vs. mechanized removal, and types of slash disposal (slash removal, chipping, mastication, burying), and the impacts these methods have on recovering vegetation.

**Burned hazard trees** (those which are likely to land on structures, powerlines or roadways) should be removed immediately. It is best to wait until next year to remove trees over large areas to allow native surface vegetation to recover for a season after the fire.

**Immediate clearcutting of blackened trees is not recommended** because of increased erosion risk from mechanical damage to surface soils and removal of remaining canopy protection of the ground and recovering vegetation.

**Scorched trees may live.** Evaluation of non-hazard scorched trees for removal is best done next summer after surviving buds have produced a new set of needles.

**There is not an immediate safety or ecological need** to remove non-hazard blackened trees over large areas of residential properties. Seek uses for large tree wood.

**Low impact selective tree-felling** using a chain saw can be done anytime.

**Trees boles and slash should be removed carefully**, avoiding running equipment up or down swales or ravines, or down the fall line of slopes. Avoid major surface disruption.

**Removal of stumps/root wads is not recommended** except in construction areas because the disturbance effectively removes the array perennial fire-adapted native vegetation which is impossible to replace.

**A light application of chips** or woodshred covering about 70% of the ground is enough to prevent erosion while allowing for plant growth and seed germination from broadcast seed application. Deep coverage by woody mulch will prevent vegetation recovery.

**Heavy mechanical equipment** (skidsteers, trackhoes, feller bunchers, skidders and non-articulated tractors) can seriously disrupt the natural recovery of surface vegetation, destroy native perennial plants, and make your land more prone to erosion.

**Carefully consider goals and actions** for your property. Work with natural recovery processes and take time to learn about restoration choices.

# Replanting and Ecosystem Integrity

**Ponderosa pine regeneration from seed** in the burn areas is likely to be years away. Many residents want to replant the forest so choice of trees is extremely important, as is time of planting, and how trees are planted. **Black Forest Together** is working on obtaining seedlings for next year and transplanting options for larger trees.

**Black Forest is at a lower timberline** - forest against the Great Plains soil and climate. The best-adapted trees are ponderosa pines, but other species can be planted and will grow here - at least for short terms until weather extremes, insects, disease or fire limit their tenure. **Black Forest native ecosystems are a wonderful mix** of plants from the Great Plains and Mountain ecosystems (east-west) and north-south from the U.S. Northern Plains and Southern Plains/deserts. Over 600 species grow here. **Noxious weed populations are increasing** and need immediate containment or eradication.

**Two major soil types** - Kettle gravelly loamy sand (mainly south of the Palmer Divide) and Elbeth Sandy loam (north of the Divide) affect what can be grown here.

**Lists of species for replanting and noxious weeds** can be found at [www.blackforesttogether.org](http://www.blackforesttogether.org).

**Native meadows** recovered very quickly after the fire and should not be replanted.

**Scorched tree understories** did not burn as severely as under blackened trees. Fallen needles in scorched areas have provided a natural mulch erosion protection in many areas.

**Seed choices** are extremely important. Some species in standard commercial mixes contain smooth brome, orchard grass or bottlebrush squirreltail. Smooth brome chokes out native species and creates tall, thick grass fuels which are not part of Fire wise or Fire-adapted management.

**Seeding is best done Nov -April** to avoid the problems of washing away by heavy rain and taking advantage of cold temperatures which help break dormancy.



Removing trees in the fall-winter, before the ground deforests in Spring, coupled with broadcast or light mechanical seeding before or after felling trees can give good results.