United States Department of the Interior

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EA Number: CA-180-09-31

Proposed Action: Weed control, including the use of herbicides, to control noxious weeds in the Telegraph Fire area.

Location: T. 3S, R. 17E; T. 4S, R. 17E; T. 3S, R. 18E; T. 4S, R. 18E. Within these four townships the project area is the Telegraph Fire perimeter, and those areas outside the fire perimeter affected by fire suppression and rehabilitation, (e.g., contingency fire lines).

1.0 Purpose of and Need for Action

1.1 Need for Action

In the aftermath of many wildfires, weeds are introduced into new areas. Fire suppression for the Telegraph Fire involved the mobilization of many pieces of heavy equipment, and many vehicles. Tractors, engines and water trucks arrived from distant locations. No wash station was established, so equipment may have carried weed seed into the fire area. Existing weed infestations within the fire perimeter may also have been spread by equipment and vehicles. For instance plant skeletons that retained seeds may have become lodged in the undercarriage of vehicles. Tractors may have pushed soils with weed seed to new locations. Tracked excavators used extensively for suppression rehabilitation, may have contributed to weed movement also. In addition to the movement of seed to new locations, fire suppression and to a lesser extent fire suppression rehabilitation and the fire itself, all create habitat favorable for weed establishment and increase. When vegetation is cleared either by equipment or fire, competition from existing vegetation is reduced. Sunlight reaches the soil surface stimulating the germination of seeds of many weed species. Increased water and sunlight availability and warmer soil temperatures favor weeds. Fire also increases nitrogen availability which favors weeds. Equipment use like blading has longer lasting impacts than the effects of fire.

Chaparral ecosystems recover quickly from fire, because chaparral includes many sprouting shrub species, fire- tolerant herbaceous perennials that recover from underground organs like bulbs, and many species with fire stimulated seed germination that begin growth the growing-season after the fire. Weeds that germinate in burned-over chaparral sites are unlikely to persist on those sites because they are eventually outcompeted by native chaparral species. Most of the public land that was burned in the Telegraph Fire was chaparral habitat. Plant communitiess with a significant herbaceous component, like savannah, are more easily invaded. But the areas that are most easily invaded are those where the existing plant community has been most disturbed, like areas bladed by tractors. Soil movement that displaces root systems, subterranean organs of perennial plants like bulbs and burls (that often survive a fire), and seed banks, can create an ecological blank slate, or nearly so. On this level playing field, the competition between weeds and the preexisting flora is often won by the weeds. Weeds are fast growing generalists that can exploit many environments.

BLM put together a BAER team for the Telegraph Fire to evaluate which fire effects were in need of mitigation. Weed inventory/monitoring and weed control were among the recommendations of the BAER team:

> Weeds already present in the Merced River corridor have the opportunity to spread into the burn area because of the reduction of competition from other vegetation and abundant bare ground produced by the fire. Weed spread can retard or prevent the natural recovery of native vegetation.
>
> Weed spread in the burn area can negatively impact the natural and recreational values of the Merced Wild and Scenic River and the Merced River Wilderness Study Area and the Merced River Special Recreation Management Area (SRMA). The Merced SRMA has three campgrounds and high visitor use focused on white water rafting. Any increase in weed populations can have a multiplier effect resulting in weeds being carried to weed-free portions of the corridor, and the widespread transmission of weed seed to other locations.
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> Stanislaus National Forest has applied for BAER funds for weed monitoring and control in the aftermath of the Telegraph Fire. Their lands abut BLM lands and primary weed movement corridors including roads, dozer lines and streams cross the BLM/USFS boundary. Only work on both sides of the boundary has any promise of long-term success.

As noted above in the BAER report, the U.S. Forest Service also put together a BAER team for their portion of the fire. The Forest Service BAER team reached similar conclusions. They also made weed inventory/monitoring and weed control high priorities.

BLM is a member of the South/Central Sierra Noxious Weed Alliance and as such BLM has agreed to participate with other agencies and groups involved in that organization to control, and where possible eradicate, noxious weeds in Mariposa County.

1.2 Conformance with Applicable Land Use Plans

The proposed action is consistent with the 2008 Sierra Resource Management Plan and Record of Decision (RMP) approved in February 2008. This project is consistent with the Vegetation Communities section of that document (section 2.4) that lists management actions:

> Prevent, eliminate, and/or control undesired non-native vegetation or other invasive species using an Integrated Pest Management approach that combines biological, cultural, physical, and chemical tools to minimize economic, health, and environmental risks.
>
> Use prescribed fire, mechanical mastication, herbicides, manual removal, seeding, propagation, and planting or combinations of these methods to promote healthy, diverse vegetation communities.
>
> Implement and meet national BLM policies consistent with the Partners Against Weeds initiative (DOI 1998) and Executive Order 13112.

1.3 This Environmental Assessment is Tiered to the Bureau-wide Programmatic EIS for herbicide use

The proposed action is consistent with the Record of Decision Vegetation Treatments using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic EIS (2007), (subsequently referenced as "USDI BLM 2007"). This Record of Decision is available at: http://www.blm.gov/wo/st/en/prog/more/veg_eis.html). Specifically this project incorporates the applicable standard operating procedures outlined in Table 2-8 of that document. This EA is tiered to the Vegetation Treatments ROD.

1.4 Relationship to Statutes, Regulations, and Other Requirements

The following Laws, Acts, Plans, Manuals, and Policies provide a foundation for noxious and invasive weed management by the BLM:

The *Carlson-Foley Act of 1968* directs agency heads to enter upon lands under their jurisdiction and destroy noxious plants growing on such land.

The *Federal Noxious Weed Act of 1974, as amended by Section 15, Management of Undesirable Plants on Federal Lands, 1990*, authorizes the Secretary "...to cooperate with other Federal and state agencies and others in carrying out operations or measures to eradicate, suppress, control, prevent, or retard the spread of any noxious weed."

The *Federal Land Policy and Management Act of 1976* directs BLM to "...take any action necessary to prevent unnecessary and or undue degradation of the public lands."

The *Public Rangelands Improvement Act of 1978* requires that BLM will manage, maintain, and improve the condition of the public rangelands so that they become as productive as feasible.

Interior Departmental Manual 609 prescribes policy to control undesirable or noxious weeds on the lands, waters, or facilities under its jurisdiction to the extent economically practicable, as needed for resource protection and accomplishment of resource management objectives.

BLM Manual 9015 provides policy relating to the management and coordination of noxious weed activities among BLM, organizations, and individuals.

2.0 Proposed Action and Alternatives

2.1 Alternative #1: Proposed Action

BLM will take an integrated pest management approach to the control of yellow starthistle and Italian thistle in the aftermath of the Telegraph Fire. Manual and mechanical approaches that have been used along the Merced River over the past decade to control yellow starthistle will be supplemented with the use of the herbicide glyphosate.

Pulling of yellow starthistle and Italian thistle will continue using hand tools including short-handled mattocks. Because both species are annuals, if they are cut below the lowest stem node in the case of yellow starthistle, or pulled up with a portion of the root in the case of Italian starthistle, and these operations occur before seed set, the plant will die without offspring. This technique is particularly

appropriate and effective for small occurrences of the weeds that are readily accessible. Each occurrence needs to be visited several times per growing season to capture early and late germinating plants. String trimmers may be used on larger clusters of plants with a vertical growth form. Because this tool cannot cut the plants below the lowest node, regrowth is possible. However if the string-mowing is well-timed, the plants will have exhausted their carbohydrate reserves, and they will not regrow.

Herbicide use will be emphasized for the largest occurrences, (in terms of numbers of plants), and for areas that are difficult to access. For dense occurrences, most of the effort with manual control is expended in pulling plants. For dispersed occurrences, most of the effort with manual control is expended in traveling between and finding target plants. Herbicides, when they are applied as spot treatments, cannot reduce the effort involved in traveling between weed patches and finding infestations. But they can reduce the effort and labor involved in killing dense patches of weeds. So herbicides give the most benefit in areas with dense occurrences of target weeds.

Glyphosate herbicide will be used where the use of herbicide will provide a clear cut advantage over manual treatment, in terms of effectiveness or in terms of a reduction of labor. The form of glyphosate to be used will be a formulation that lacks a pre-mixed surfactant, e.g., Rodeo or Aquamaster. Such formulations are approved for aquatic uses because they lack the adjuvant polyethoxylated tallow amine or POEA, (a component of Roundup Original for instance), that has been found to be damaging to tadpoles (Relyea 2005). An herbicide approved for aquatic uses will be used because of the proximity of many of the weed occurrences to the main stem of the Merced River and the North Fork Merced River as well as some smaller tributaries of these rivers. As specified on the herbicide labels, a surfactant safe for aquatic use will be added to increase herbicide effectiveness. The adjuvant will either be vegetable oil based or petroleum oil based. Nonylphenolethoxylate, (NPE), surfactants will not be used, because they have been shown to be toxic to some aquatic organisms when present in water in high concentrations (Bakke 2003; Monheit 2004). In most cases this toxicity has only been demonstrated at concentrations that are higher than normal application rates. But substituting a vegetable oil based adjuvant or crop oil concentrate adjuvant with surfactant properties for NPE surfactants provides an extra margin of safety for aquatic organisms. The herbicide plus surfactant will be spot sprayed on yellow starthistle and Italian thistle plants from a backpack spray unit. Spot spraying will minimize the amount of herbicide applied. A 2% solution (or less) of glyphosate formulation, (e.g., Rodeo or Aquamaster), will be applied, either once or twice per growing season as needed. Treatments will occur for up to five seasons, (2009-2013), again depending on the need for follow-up applications. As soon as weed populations are reduced to the point that manual/mechanical methods become practical, herbicide use will be discontinued.

2.2 Project Design Features

The glyphosate formulation without pre-mixed surfactant, (e.g., Rodeo, Aquamaster), will be used due to the proximity of target weed occurrences to the Merced River and tributaries including the North Fork Merced River, and because these formulations are approved for use "in and around aquatic sites". Other formulations of glyphosate, like Roundup Original, have been linked to amphibian mortality and are not labeled for aquatic use. This amphibian mortality has been traced to POEA, a surfactant included in Roundup Original and other formulations, but not found in those formulations labeled for aquatic use. The active ingredient, glyphosate, does not produce these injurious effects to amphibians. An adjuvant/surfactant that is safe for aquatic applications (e.g., some vegetable oil based adjuvants and some crop oil concentrates) will be added to the spray mixture. NPE surfactants will not be used, because they have been shown to be toxic to some aquatic organisms, at least at high concentrations.

To avoid any exposure of the public to spray drift, the spray areas will be posted with "spraying, do not enters" signs on the day of spraying.

To avoid drift of the spray mix reaching surface water, a 25' no-spray buffer will be observed around any open water. Hand pulling or other manual/mechanical methods will be used for weed control in the buffer zone.

To avoid drift, spraying will not occur if wind speeds exceed 10 mph.

No spraying will occur if rain is predicted within 24 hours of the time of spraying.

Mixing and loading operations will be conducted a minimum of 100' from any body of water, and there will be provisions for spill containment at the loading/mixing site.

A no-spray buffer of 100' will be observed around any elderberry shrubs to avoid any impacts to the valley elderberry longhorn beetle.

A no-spray buffer of a minimum of 15' will be observed around any plants of a special status species. In the case of *Clarkia* species that have not bloomed at the time of spraying, if the plants cannot be distinguished from special status *Clarkia* species, they will be treated as if they were the special status species, and the appropriate buffer will be observed.

2.3 Alternative #2: Using only manual/mechanical methods, expand the present program of yellow starthistle control to include the Telegraph Fire area, and add Italian thistle control

Manual/mechanical removal of yellow starthistle as practiced for the last decade along the Merced River railroad grade would be continued and expanded to new occurrences resulting from the Telegraph Fire and fire suppression activities. Hand pulling, cutting the root below ground with a short handled mattock, and the use of string trimmers would all be continued. Italian thistle would be controlled in the same fashion. Because of the different timing of the growth and flowering of these species, each species would require a separate control effort.

Person-power would be limiting in controlling both weed species. Over the past decade it has been a struggle to maintain partial control of the railroad grade occurrences of yellow starthistle using only manual/mechanical methods, because of limited labor availability. The fire area is several orders of magnitude larger than the recreation zone along the Merced River railroad grade where manual/mechanical yellow starthistle control has been practiced in the past. How much of the fire area has become infested with weeds is not yet known. Also, adding another species, Italian thistle, would increase the labor required for control. Surveys of the fire area for weed species, including miles of highly disturbed fire control line, will also require substantial labor. All of this work cannot be accomplished with available personnel using only manual/mechanical control methods. For this reason this alternative will not be analyzed further.

2.4 Alternative #3: No additional weed control in response to the Telegraph Fire

With the no action alternative, yellow starthistle and Italian thistle would not be treated with either herbicides or manual methods in the greater fire area. Yellow starthistle control (manual/mechanical) along the Merced River railroad grade might continue.

3.0 Affected Environment

- **Soils**:

The soils within the Telegraph Fire burned area derived from basic and metabasic igneous rock or from metasedimentary rock. The soils have developed under chaparral, oak woodland or forest vegetation and are typically shallow to moderately deep on mountain slopes or ridges and moderately deep to very deep on toe slopes.

Soils were mapped and identified by the USDA-NRCS. Dominant soils include the Maymen-Mariposa and Auburn-Daulton associations. Maymen and Mariposa soils are well-drained, very shallow or shallow soils weathered from material weathered from metasedimentary rock on moderately steep to very steep slopes. Auburn and Dalton soils are well-drained, very shallow or shallow soils derived from materials weathered from schist and slate on gently sloping to very steep slopes (SCS, 1974). Other included soils are the Boomer, Josephine, and Trabuco series. Surface textures are commonly loam, silt loam, or sandy loam with coarse fragments ranging from 5 to 60 percent consisting of gravels, stones, boulders, channers, and flagstones. Erosion hazards are severe due to long steep slopes. There are areas of exposed bedrock typically on the shoulders of steep slopes.

- **Vegetation**:

  Dominant vegetation:

Most of the project area was burned in the Telegraph Fire, and in many areas all of the above ground live plant biomass was consumed during this fire in the summer of 2008. The vegetation that will be affected by the project will be the vegetation that returns post-fire in the first few years of post-fire recovery. As mapped by the USDA Forest Service Remote Sensing Lab (November 2006), the primary plant communities that grew before the fire within the perimeter of the Telegraph Fire were chamise chaparral (39.0%), lower montane mixed chaparral (12.2%), interior live oak woodland (14.4%), blue oak savannah (5.8%), canyon live oak woodland (3.6%), black oak woodland (0.9%), mixed hardwood (0.8%), non-native annual grassland (5.1%), gray pine (9.0%), west side ponderosa pine forest (7.9%), and valley-foothill riparian forest (0.1%). Lumping these figures into broader classes, 51% of the lands within the fire were chaparral, 25% oak woodlands or savannah, 17 % was dominated by pines and 5% supported mostly herbaceous vegetation. Because the Forest Service and private lands within the fire boundary had more forest and woodlands, the vegetation distribution of the BLM public lands were even more heavily weighted to chaparral than the above figures would suggest.

Chamise dominated on south facing slopes. Forest and hardwood communities dominated on north facing slopes and at higher elevations. Few of the tributary drainages or the Merced River at this elevation are truly perennial, but many have substantial reaches with riparian vegetation. Apparently some riparian areas are spring-fed, forming static pools or providing subsurface water for vegetation after flow has ceased in the spring or summer.

Chaparral species in the fire area included chamise, white leaf manzanita, mewukka manzanita, buckbrush, toyon, western mountain mahogany, flowering ash, golden fleece, blue elderberry, keckiella, holly-leaf redberry, poison oak. Associated tree species included knobcone pine, gray pine, sugar pine, California juniper, interior live oak.

Many of the same species were found in the oak woodland and forest sites with additions like ponderosa pine, incense cedar, canyon live oak, black oak, blue oak, woollyleaf ceanothus.

Chaparral species are fire adapted and can generally reestablish after fires. Many dominant chaparral species are able to withstand fire by regrowth from subsurface or basal structures like burls, that are subjected to less heat than aerial structures. Latent buds in these structures are stimulated after a fire to initiate new stem growth. Among the species with this ability in the chaparral portion of the burn area are chamise, Mewukka manzanita, redbud, toyon, western mountain mahogany. Other species do not have this ability to vegetatively reproduce after fire, but reproduce abundantly from seed that is stimulated to germinate by cues provided by the fire. Among the chaparral species at the Telegraph Fire, white leaf manzanita and buckbrush have this reproductive strategy. Some species like chamise are able to both sprout and seed successfully after fire, although one of these strategies usually is more successful under specific fire conditions. Even one of the conifer species associated with chaparral in the fire area, knobcone pine, is a closed-cone pine adapted to release seed after fire. Although much of the fire area had not burned in decades, this may be a typical fire return interval according to current research. Half of the chaparral lands of southern Sierras have not had a fire since 1910. Seed of chaparral plants maintain their viability in the seed bank. Research on a 2002 chaparral burn in Sequoia National Park where some of the stand had not burned in 150 years found no depletion of species during post-fire recovery, relative to younger stands.

All of the abundant oaks in the fire area, (interior live oak, canyon live oak, blue oak, black oak), have the ability to sprout. California buckeye similarly has the ability to sprout. So again the oak woodlands are resilient to fire.

Riparian vegetation often has the ability to vegetatively reproduce because it grows in an environment with frequent disturbance events, especially flooding and sedimentation. Willows and cottonwoods have this ability for instance. On the other hand at least one set of observations indicates that white alder may be killed outright by fires under some fire conditions. The riparian vegetation at the Telegraph Fire was generally burned with low severity or left untouched by the fire. Again this community should recover.

The community most susceptible to high intensity fire is the westside ponderosa pine forest. Ponderosa pine will survive low intensity ground fires and a pattern of frequent fires of low intensity is thought to have been the pre-settlement fire regime. The few observations of this community at the Telegraph Fire (with limited acreage on public land), ponderosa pine forest appears to have burned mostly with low to moderate intensity. The areas of low intensity fire may temporarily produce the open park-like hypothesized climax condition for this forest type, because in these areas overstory trees were spared and most of the understory was eliminated. Moderate intensity fire produces overstory mortality and leaves gaps that will be occupied by a new tree seedlings, including seedlings of shade intolerant species.

Most of these communities were sufficiently mature that the species that depend on the development of seed banks, had already accumulated seed in the soil. Although this fire was a human caused ignition, it mimicked a natural fire. Because of the resilience of most of these plant communities, and the low to moderate intensity fire that generally ran through the more fire susceptible communities, (for instance the ponderosa pine forest sites), it is thought that there will be good recovery of native vegetation through natural processes and a return to a similar distribution of communities across the swath of the fire.

Special status plant species:

Two special status plant species are known to occur within the Telegraph Fire perimeter on public land. Both are annual *Clarkia* species. *Clarkia* species in general do not accumulate a seed bank.

Seed generally germinates the first year after production. This allows little time for the incorporation of seed into the soil profile, meaning that during a fire much of the seed is near the soil surface and exposed to more intense heat than deeply buried seed. Fortunately during the Telegraph Fire most of the known habitat of these two species was burned with low intensity or not at all. (Intensity judged from observation in some areas, and from burn severity mapping in others.) It should be noted that other potential habitat in the fire area had not been surveyed for rare plant species, and so the full extent of these populations is not known. Low intensity burning may benefit one or both of these species. At least Mariposa clarkia, *Clarkia biloba australis,* generally favors habitat with substantial bare ground, and it is often found in disturbed areas or areas with accelerated erosion like steep roadcuts.

The steep northeast facing slope on upper Mt. Bullion where beaked clarkia, *Clarkia rostrata*, occurs had low fire intensity, possibly caused in part by aspect. In contrast the lower canyon sites for Mariposa clarkia were largely on steep rocky ground, some of it a cut for the Yosemite Railroad and much of it south-facing. Fuels here are interrupted by a road and the Merced River. Here vegetation was sparse and mostly herbaceous before the fire, and the generally uneven low intensity burn in this area was likely to have been neutral or favorable for Mariposa clarkia.

Contingency lines away from the fire affected two special status plant species as well. Parry's horkelia, *Horkelia parryi,* was affected by dozer work on Timbrush Fuelbreak. Some areas of the plant were bladed, presumably eliminating the plants that occurred there, at least for the short term. Other plants were run over by equipment. This clonally spreading perennial is likely to rebound from many lesser forms of injury as long as its habitat has not been too greatly altered.

A small roadside occurrence of Mariposa clarkia at the edge of the road slated to become the lower portion of Buckhorn Fuelbreak was probably affected by crews clearing brush from the road edge with chainsaws. Working with CalFire during suppression rehabilitation, the plan for the disposal of the brush that was cut during suppression was changed so the resulting chips were not distributed along the roadside in Mariposa clarkia habitat. Increased traffic on this road during suppression, including dozer traffic, may have affected the species also. Some grading may have occurred as well, though no sidecast material was observed. Further, there is the possibility that equipment or vehicles may have brought seed of non-natives not already present at the site. If this occurred, there is the possibility of new competition detrimental to Mariposa clarkia. With all of these disturbance factors, and because of the small size of the original occurrence, the loss of the entire occurrence is possible.

- **Wildlife**:
  General wildlife:

With respect to the fisheries resources of the Merced River, the river reach in the Telegraph Fire area occupies a transitional zone between the cold waters of the upper reaches of the Merced and the warm waters of Lake McClure, an impoundment of the Merced, the headwaters of which extend to Bagby. In general, the fisheries of the region tend towards the warmwater type; however, a broad cross section of native and introduced, warmwater and coldwater species occur on the Merced system. Smallmouth bass (Micropterus dolomieui) predominates in a year-round warmwater sport fishery, while rainbow trout (Salmo gairdnerii) and brown trout (S. trutta) are present in the winter months and during spring runoff (Finney pers. comm.). The invasive red-eyed bass has recently (2007) been found in the river above Lake McClure (Stillwater Sciences, 2008).

Species of amphibians and reptiles which may occur in the Merced River drainage include the California newt (Taricha torosa), several species of slender salamander (Batrachoseps spp.), arboreal salamander (Aneides lugubris), ensatina (Ensatina eschscholtzi), western toad (Bufo boreas), Pacific

tree frog (Hyla regilla), bullfrog (Rana catesbeiana), western pond turtle (Clemmys marmorota), western fence lizard (Sceloporus occidentalis), southern alligator lizard (Gerrhonotus multicarinatus), Gilbert's skink (Eumeces gilberti), garter snakes (Thamnophis spp.), gopher snake (Pituophis melanoleucus), ring-necked snake (Diadophis punctatus), common kingsnake (Lampropeltis getulus), and western rattlesnake (Crotalus viridus) Tordoff 1980, Verner and Boss 1980). Maddox (pers. comm.) reported one known occurrence of the coast horned lizard (Phyrnosoma coronatum), a BLM sensitive species. The limestone salamander (Hydromantes brunus) and the foothill yellow-legged frog (Rana boylii) are discussed below among special status species.

Over 200 species of birds occur seasonally or as residents in the Sierra Nevada (Verner and Boss 1980). Many of these species can be found on the Merced River. A number of important upland game species occur here, including the California quail (Lophortyx californicus), a common resident, and the mountain quail (Oreortyx pictus), which moves downslope during the winter into the Merced River drainage from breeding grounds in the Sierra high country. Turkeys (Meleagris gallopovo) occur in the Halls Gulch area about 4 miles below Briceburg. The Merced also supports the band-tailed pigeon (Columbia fasciata) and mourning dove (Zenaida macroura), both of which are fairly common, and probably the common snipe (Capella gallinago). Also of interest is the roadrunner (Geococcyx californianus), an uncommon (nongame) resident, and the wood duck (Aix sponsa), a common breeder. The mallard (Anas platyrhynchos), bufflehead (Buchephala albeola), cinnamon teal (Anas cyanoptera), and common merganser (Mergus merganser) may also breed on the Merced. A variety of other waterfowl species and shorebirds probably occur as winter migrants.

The Merced River supports a number of raptor species which currently appear on the state endangered species lists. The state-listed bald eagle (Haliaeetus leucocephalus) occurs as a winter migrant on all reaches of the Merced, but concentrates in numbers on Lake McClure. A single breeding record is known for the North Fork of the Merced (McLean 1925, cited by Detrich 1986). In 2009, California Department of Fish and Game, reported a Bald Eagle nest on Lake McClure near Horseshoe Bend Recreation Area. It is unknown if the nest produced young this year. The great gray owl (Strix nebulosa), a state-listed endangered species, moves downslope into the Merced during the winter from its breeding areas in Yosemite National Park (Winter pers. comm.). The spotted owl (S. occidentalis) also reportedly winters in the area; like the great gray owl, the species moves into the foothills with the arrival of snows in the high country where it breeds (Laymon pers. comm.). The spotted owl is not currently listed as threatened or endangered; however, it is considered a BLM sensitive species. Finally, one record for the state-listed peregrine falcon (Falco peregrinus) is known from the Merced River (U.S. Bureau of Land Management 1979). This species occurs as a casual winter migrant.

Other raptor species of interest which are known to or probably occur on the Merced River as breeders, migrants, or casual visitors include the golden eagle (Aquila chrysaetos), osprey (Pandion haliaetus), northern goshawk (Accipiter gentilis), sharp-shinned hawk (A. striatus), Cooper's hawk (A. cooperi), red- tailed hawk (Buteo jamaicensis), Swainson's hawk (B. swainsoni), red-shouldered hawk (B. lineatus), northern harrier (Circus cyaneus), black-shouldered kite (Elanus caeruleus), prairie falcon (Falco mexicanus), merlin (F. columbarius), American kestrel (F. sparverius), common barn owl (Tyto alba), western screech owl (Otus kennicottii), flammulated owl (O. flammeolus), great horned owl (Bubo virginianus), northern pygmy owl (Glaucidium gnoma), burrowing owl (Athene cunicularia), long-eared owl (Asio otus), short eared owl (A. flammeus), and the northern saw-whet owl (Aegolius acadicus).

At least 94 species of game and nongame mammals occur in the Sierra Nevada (Verner and Boss 1980). Nongame species in the Merced River area iclude the opossum (Didelphis virginiana), porcupine (Erethizon dorsatum), and perhaps the mountain beaver (Aplodontia rufa). The northern flying squirrel (Glaucomys sabrinus), a fully protected species, occurs locally where stands of

ponderosa pine occur. Common small game species include the brush rabbit (Sylvilagus bachmani), desert cottontail (S. audubonii), black-tailed jackrabbit (Lepus californicus), western gray squirrel (Sciurus griseus), and Douglas' squirrel (Tamiasciurus douglasii). Common big game species in the area include mule (blacktail) deer (Odocoileus hemionus) (the Merced provides critical winter range for the Yosemite deer herd), and the black bear (Ursus americana). Furbearers which are known to or probably occur include the muskrat (Ondatra zibethicus) coyote (Canis latrans), gray fox (Urocyon cincereoargenteus), the protected ringtail (Bassariscus astutus), racoon (Procyon lotor), long-tailed weasel (Mustela frenata), mink (M. vison), badger (Taxidea taxus), western spotted skunk (Spilogali gracilis), striped skunk (Mephitis mephitis), and bobcat (Felis rufus). The status of the marten (Martes americana), river otter (Lutra canadensis), and beaver (Castor canadensis) on the Merced is uncertain (Maddox pers. comm.). The status of the mountain lion (Felis concolor) is also uncertain, but this protected species probably occurs in small numbers.

Special status animals:

Two special status animal species occur within the fire perimeter. These are the limestone salamander (*Hydromantes brunus*), state-listed threatened species, and foothill yellow-legged frog (*Rana boylii*), BLM sensitive species. Potential habitat (elderberry shrubs) for a third special status species occurs within the fire perimeter. This is the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), a federally-listed threatened species. Valley elderberry longhorn beetle have not been documented to occur within the fire area.

The limestone salamander is listed as threatened under California's Endangered Species Act. The range of the limestone salamander is restricted to 31 occurrences along a 20-mile stretch of the Merced River between the headwaters of Lake McClure, near the community of Bagby, and the mouth of Sweetwater Creek, near Briceburg. (Lehman, 1989; Sutton, 2006). There is also 1 isolated sighting on the South Fork Merced on Sierra National Forest near Hite Cove (Sutton, 2006). Twenty-one of 31 confirmed population sites, and 29 of 38 sites containing suitable habitat are on BLM lands. The species occurs nowhere else in the world. The largest known population occurs at Hell Hollow (Tordoff 1981).

Limestone salamander potential habitat is characterized by 1) northwest to east facing slopes 34 degrees and steeper; 2) numerous rock outcrops and moss covered talus, and; 3) oak/buckeye woodland with a thick shrub understory. The salamander spends much of the year deep in the talus, and only emerges to the surface during the wet season.

BLM designated the Limestone Salamander ACEC in 1986 to include confirmed sites and potential habitat of the limestone salamander. The limestone salamander is one of California's rarest native amphibians. BLM expanded the ACEC area to include more confirmed sites and potential habitat of the limestone salamander in the Sierra RMP approved February 2008. The ACEC encompasses approximately 2,000 acres of confirmed and potential limestone salamander habitat and adjacent BLM lands along the Merced River and its tributaries in western Mariposa County.

Eight Limestone Salamander ACEC units occur within the fire perimeter.

The foothill yellow-legged frog is listed as a BLM sensitive species. The situation for foothill yellow-legged frogs in the Sierra Nevada is bleak; there are no populations in the southern Sierra Nevada foothills that are likely to remain viable for more than a decade. Populations in the northern Sierra are more numerous and generally larger, but they may be in decline as well. Foothill yellow-legged frogs are susceptible to a wide range of environmental impacts including loss of habitat, pesticides, competition/predation from nonnative species (e.g. warm-water fish, bullfrogs, crayfish), disease, water impoundments, logging, mining, and grazing in riparian zones. In the Sierra Nevada foothills of

California, air-borne pesticides (that move east on the prevailing winds blowing across the agricultural lands of the Central Valley) are likely to be the primary threat to foothill yellow-legged frogs (LeNoir et al., 1999; Sparling et al., 2001; Hayes et al., 2002b). The populations of foothill yellow-legged frogs in greatest decline are all downwind of highly impacted (mostly agricultural) areas, while the largest, most robust frog populations are along the Pacific coast.

This species inhabits partially shaded, rocky streams at low to moderate altitudes, in areas of chaparral, open woodland, and forest (Nussbaum, Brodie and Storm 1983; Hayes and Jennings 1988). It seeks cover at the bottom of a pool when startled. Its breeding and non-breeding habitats are the following, in order of decreasing favorability: (1) partially shaded, small perennial streams , 30-1,000 m asl, with at least some cobble-sized rocks, riffle areas and a stream depth rarely greater than 1 m; (2) intermittent , small, partly shaded, rocky streams displaying seasonal riffle habitat; (3) large (consistently greater than 1 m in stream depth), partly shaded, perennial streams with rocky or bedrock habitat; and (4) open perennial streams with little or no rocky habitat. Breeding takes place in pools of streams, and eggs are usually attached to gravel or rocks at the edge of pools or streams (Nussbaum, Brodie and Storm 1983). In northern California, eggs were found attached to cobbles and boulders at lower than ambient flow velocities, near confluences of tributary drainages in wide, shallow reaches , and most breeding sites were used repeatedly (Kupferberg 1996).

Extant populations of foothill yellow-legged frogs are not evenly distributed in California. In the Pacific northwest, 40% of the streams support populations of foothill yellow-legged frogs, while that number drops to 30% in the Cascade Mountains (north of the Sierra Nevada), 30% in the south coast range (south of San Francisco), and 12% in the Sierra Nevada foothills.

Foothill yellow-legged frogs have been found most recently (2008) along the main Merced near Hall's Gulch (Dobrovolny, pers. comm.), as well as along Sherlock Creek and the Main Merced at the mouth of Sherlock Creek (Unpubl. BLM records). The Sherlock Creek population appears to be robust, with tadpoles, morphs, and adults all seen within the stream. The portion of the stream with the largest numbers of frogs extends from Drunken Gulch downstream to the Merced River. However, there are frogs using the Sherlock Creek upstream of Drunken Gulch as well.

Valley elderberry longhorn beetle VELB *(Desmocerus californicus dimorphus)* is listed as a threatened under the Federal Endangered Species Act. Because VELB is an obligate specialist on elderberry, reduction in the amount or quality of suitable riparian woodland habitat has had a significant impact to the VELB. Riparian woodland habitat has been largely reduced and severely fragmented by flood control, intensive agricultural production, and urbanization, especially in the Central Valley of California. Another possible threat to VELB is the invasion of the argentine ant, an introduced ant species that has impacted native ants and other ground-dwelling arthropods. Argentine ants may predate on VELB eggs.
The VELB is completely dependent on its host plant, elderberry (*Sambucus* species), which is a common component of the remaining riparian forests and adjacent upland habitats of California's Central Valley and associated foothills up to 3000 feet. *Sambucus* serving as hosts for the VELB occurred in several plant communities: riparian forest, savanna or grassland, oak woodland, and mixed chaparral-foothill woodland. The VELB was more frequently encountered in riparian forest margin and elderberry savanna than other situations. Host plants grew in the open, without overstory, and also as understory plants. Elderberry shrubs/trees with many exit holes were most often large, mature plants; young stands were seldom infested. The VELB seems to prefer stems for larval development and pupation which are larger than an inch or two in diameter. The beetle was most likely to occur in situations where plants were not isolated from one another.

The beetle has only been found in association with its host plant, elderberry (*Sambucus* spp.). Adults feed on the foliage and perhaps flowers, and are present from March through early June. During this period the beetles mate, and the females lay eggs on living elderberry plants. The eggs are about 2.5-3.0 mm long, reddish brown, and are shaped like an elongate football with longitudinal ridges. The female places the eggs singly or in small groups in bark crevices or at the junctions of stem/trunk or leaf petiole/stem. Presumably the eggs hatch shortly after they are laid. Larvae bore into the pith of larger stems and roots. When larvae are ready to pupate, they work their way up from the roots through the pith of the elderberry, open an emergence hole through the bark and return to the pith for pupation. The entire life cycle encompasses two years, however, the duration of each life stage is unknown. Adult emergence occurs at about the same time the elderberry flowers.

There is a known occurrence of elderberry shrubs on Black Mountain Road near the North Fork Merced inside the fire perimeter. There are also known occurrences within areas impacted by fire suppression activities. These are Buckhorn Road, Schilling Road, and Rancheria Road.

- **Hydrology and water quality**:

The Merced River is stable bedrock and boulder controlled stream flowing through a relatively narrow canyon. The riparian area is classified as a "Valley Foothill Riparian Area", which is dominated by cottonwood, alder, willow, and ash. During the Telegraph Fire this riparian area was lightly burned with low to moderate severity patches extending down towards the stream. Although the riparian area within the canyon was slightly impacted by the fire, un-burnt upstream areas should allow for recovery without additional human intervention. The river experienced a large flood in 1997, which affected infrastructure, but the channel remained stable through this reach.

The North Fork Merced River is a large tributary entering the project area approximately one mile above the fire boundary. The lower five miles are intermittent with a bedrock and boulder channel. Halls Gulch is a large tributary entering the Merced in the middle of the project area. The channel is stable with little risk of instability. Sediment storage is abundant within the mined floodplain. There is a bridge over Halls Gulch just above the confluence with the Merced River. Sherlock Creek is a B2/3 stream type (boulder/cobble) with a 25 foot width floodplain. The lower energy of this channel and the pocket pools associated with the bed material make it vulnerable to sedimentation. With increased sediment load crevices have a high likelihood of filling, reducing habitat for the yellow legged frog and fish found in the channel.

Water for domestic consumption in the town of Mariposa is withdrawn from the Merced River a little over 1 mile downstream of Briceburg inside the project area. It is withdrawn seasonally, mostly in the summer months, and pumped to a reservoir close to the town of Mariposa. The next diversion of water for domestic consumption is more than 10 miles downstream of the project area in Lake McClure.

- **Recreation**:

There are four main recreation resources in the fire/project area: (1) The Merced River itself in the Telegraph Fire area is designated a Wild and Scenic River. The upper portion of this river section, from the US Forest Service boundary to approximately the Mountain King Mine, is designated recreational. The lower section, from Mountain King Mine to the high water mark of Lake McClure, is designated wild. (2) Along the Merced River there is the Merced River Special Recreation Area, with three campgrounds, two day-use areas, a boating take-out, a portage facility, a visitor's center, an access road, and trail along the old Yosemite Railroad grade. Rafting on the Merced River is popular, supporting a number of commercial outfitters. The campgrounds along the river are also popular. Local users and visitors from out of the area fill the campgrounds most weekends during the spring and summer. (3) The Merced River Wilderness Study encompasses much of the North Fork Merced River

drainage but also spans the Merced River and includes lower Sherlock Creek and much of the ground around Telegraph Hill. (4) The fourth recreation resource, Timbrush Fuelbreak is well away from the fire perimeter. However during fire suppression contingency lines were constructed there and weeds may have been introduced or spread by this work. This project extends to this area for that reason. Timbrush Fuelbreak has become an off-road vehicle use area. This use of the area was fostered by the construction of an off-road staging area on Stanislaus National Forest land in close proximity to the fuelbreak and BLM managed public land. Motor vehicle use of the fuelbreak is not authorized under the Sierra Resource Management Plan. However BLM and Stanislaus N.F. are in discussions about authorizing more limited use of the fuelbreak and surrounding area for off-road vehicles, with area restrictions that address other resource concerns.

- **Visual resources**:

According to the Sierra Resource Management Plan (2/08), the Merced Wild and Scenic River corridor and the North Fork Merced River are to be managed for VRM Class I. The Merced River Wilderness Study Area is to be managed for VRM Class II. All of the other lands in the Telegraph Fire area are to be managed for VRM Class III.

- **Cultural**:

The prehistory of the area is known mainly from archaeological studies conducted in Yosemite National Park, along the upper reaches of the Merced River. These studies indicate that hunter-gatherers groups inhabited Yosemite for thousands of years prior to historic contact in the 1800s, and that by late prehistory (1500 to historic contact about 150 years ago) these groups had a lifestyle typical for Californian hunter-gatherers of the western Sierra. Acorns, deer, and salmon were of primary importance to them. The upper reaches of the Merced River watershed were just one portion of a much larger area used by prehistoric people as they went about procuring these and other resources.

Less is known about the prehistoric land-use in the BLM-administered portions of the Merced River watershed between 3000 and 1000 ft in elevation. Bedrock milling stations and camp sites have been found on BLM-administered land in the watershed within this elevation range, and it seems certain that prehistoric people hunted, gathered, fished, and sought other resources within this part of the watershed, at least on a temporary basis, as part of their seasonal rounds (annual migration into the high country). More substantial settlement appears to have been focused on the river's tributaries on the canyon rim. At the time that Euro-Americans and other outsiders arrived in droves during the mid-1800s, the Miwok – thought to be the descendents of the area's prehistoric people – were living in the Merced River watershed.

The famous American explorer, soldier, and political leader John Fremont was among the earliest Euro-Americans to settle in the area. In 1847, he acquired a large Mexican land grant called Las Mariposas that included the present-day town of Mariposa. Not long after the start of the Gold Rush in 1848, prospectors began scouring his land, the Merced River canyon, and elsewhere in the region for placer gold. Sherlock Creek, named for the Sherlock brothers, may have been one of the earliest creeks to be mined in the Merced River canyon. Placer mining waned by the early 1850s as the easily found placer gold became depleted.

By the late 1800s, hardrock gold mining became a dominant industry within the Merced River watershed and Mariposa County generally. Production may have peaked during 1860s-1880s, (mining activity/returns for this period were poorly documented). Many of the operations, particularly those that endured well into the 1900s, appear to have been small scale, with few workers, sporadic development, shoestring budgets, and hodgepodge arrays of mining and milling machinery. By the

mid-1900s, the mines still being developed were typically worked on the side by one or two men, who typically were involved full-time in ranching or some other occupation. Mines located on (or partially on) BLM-administered land in and around the Merced River canyon include the Schroeder, Diltz, Our Chance, Permit, Landrum, and Governor/Live Oak. The Jumper, Blue Moon, Orange Blossom, Mt. Gains, and Badger are located farther west, near Hornitos. The Mt. Gains was among the most productive mines in the county and was a large-scale operation during the 1930s.

The rugged brushy terrain of the Merced River canyon appears to have hindered ranching, farming, and homesteading during the late 1800s, but there was enough timber here to support commercial logging, particularly at higher elevations. By the early 1900s, many of the best virgin stands had been logged by operators like the Yosemite Lumber Company. Other industrial/commercial endeavors were attempted in lieu of gold mining and logging. The opening of Yosemite Valley as a major tourist destination by the turn of the century reinvigorated and changed the economy of Mariposa County. The Yosemite Valley Railroad, built in 1907, was designed to help get people to and from Yosemite Valley. The railroad grade ran along the Merced River from Merced in the Central Valley to El Portal just west of Yosemite Valley. The train passed through the BLM-administered part of the canyon, including portions of the Mountain King Mine complex, Railroad Flat, McCabe Flat, and Briceburg.

The patented Mountain King Mine was discovered sometime during the mid- to late 1800s, but little is known about its early history. By 1904, the mine was being developed by the Omparisa Mining Company headed by H. C. Austin. A five-stamp mill was installed in 1905 and was increased to ten stamps later the same year. The mine also had a hydroelectric facility built by PG&E. The remains of the facility include a dam located on BLM-administered land, still visible today. The development of the mine was sporadic during the 1910s when the Mountain King Mining Company took over operations. The company called it quits in 1922 because operating costs exceeded production returns. After a few years of development under lease, the mine was abandoned.

Railroad Flat was the location of a small town called Hart associated with the Mountain King Mine. The town reportedly consisted of houses and a few businesses, including a "cat house." There is a small cemetery (with historic and modern graves) at Railroad Flat, located near the BLM campground that now occupies much of the area. McCabe Flat, also a BLM campground, has seen sporadic mining and residential activity since the Gold Rush.

During the 1910s, Briceburg consisted of a train station/post office/store/freighting office owned by William Brice, the Brice house, some small outbuildings, and a footbridge across the river. The construction of the highway to Yosemite Valley during the 1920s (current Highway 140) led to the abandonment of the Yosemite Valley Railroad by the end of World War II. (The railroad grade survives, in part, as an access road and recreational trail.) A bridge was put in across the Merced River at Briceburg to move supplies from the railroad to the construction sites. Convict workers from San Quentin were used to build the highway. A residential camp (Camp E) for the workers and their supervisors was placed along the highway near Briceburg. The camp consisted of various tent structures occupied from 1923 to 1925.

Built in 1927, the River View Tavern (later known as the Briceburg Inn) was a full-menu Italian restaurant and Standard Oil gas station located along the highway at Briceburg. A motel was added later. For years, the Briceburg Inn catered to travelers on the highway connecting Mariposa and Yosemite. In the late 1980s, the building was acquired by BLM and turned into a visitor center. The current bridge at Briceburg was put in during the 1930s as part of the Ponderosa Way fire break project.

- **Fire/fuels**:

The primary plant communities within the perimeter of the Telegraph Fire as mapped by the USDA Forest Service Remote Sensing Lab (November 2006) are 51% chaparral, 25% oak woodlands or savannah, 17 % communities dominated by pines and 5% vegetation types dominated by herbaceous vegetation. Within the BLM section of the fire the proportion of chaparral was even higher. Although these plant communities will return, for the first few post-fire years the fuel profile will be altered, because many of these plant communities will have been returned to an early successional stage. For instance new seedlings and sprouts of chaparral shrubs are less flammable and the fuels more dispersed than is the case for more mature stands. Such stands are less likely to carry a fire, and if they do carry a fire, the intensity of the fire will be less. A massive fire like the Telegraph Fire would be unlikely until the stands had matured for several years. However wind driven events have caused the reburning of relatively young chaparral stands.

- **Social/agricultural**:

Two BLM grazing leases #04149 (Merced lease) and #04200 (Mt. Bullion lease) are within the fire/project area. The Merced lease authorizes grazing of cattle for 2057 animal unit months (AUM) on 23,351 acres. However the lessee has been using the lease for trailing his cattle between private land at lower elevation and a Forest Service lease at higher elevation. Until the fire, most of the BLM ground was a brushfield that provided little forage. The Mt. Bullion lease is for 125 AUM's on 2,328 acres. To permit recovery of the plant community, BLM required non-use of these leases during the 2009 grazing season. Whether use of the leases will be resumed in 2010 will be determined after review at the end of the 2009 growing season.

- **Non-native weeds**:

Although mature stands of the plant communities affected by the Telegraph Fire are generally resistant to invasion by many weed species, disturbed stands may be invaded preventing or retarding recovery of the native plant community. Weeds in the fire area are typical of much of the Sierra foothills and are found mostly in high use areas where native vegetation has been displaced by disturbance. Existing weed occurrences will have more potential to spread in the post-burn environment because of reduced competition in burned and disturbed vegetation. Competition reduction in burned habitat is likely to correlate with burn severity. Dozer lines from fire suppression are even more likely to be corridors of weed spread, because equipment may have spread weed seed. If weeds were spread down dozer lines, then weeds can travel from them into burned areas. Weeds of particular concern because of their ability to displace native vegetation are yellow starthistle and Italian thistle. Others present include tocalote, fig, tree-of-heaven. Known loci of yellow starthistle distribution are the old railroad grade along the northside of the Merced River, and the North Fork Merced River in the vicinity of a prominent road crossing (northwest corner of section 25). Another smaller occurrence of yellow starthistle is on the planned portion of the lower Buckhorn Fuelbreak. Weed occurrences on US Forest Service land may affect BLM lands because equipment moved between jurisdictions while constructing firelines. Of particular concern in this context are the areas around Black Mountain and Burma Grade/Bull Creek Road.

- **Special land use designations**:

The Merced Wild and Scenic River runs through the project area. The upper portion of this segment of the river (upstream of Mountain King Mine) is designated recreational. The reach below is designated wild.

Most of the 11,600 acre Merced River Wilderness Study Area is within the project area.

Eight units of the 2,200 acre Limestone Salamander ACEC lie within the project area.

4.0 Environmental Effects: Impacts of the Proposed Action and Alternatives

The following critical elements have been considered for this environmental assessment, and unless specifically mentioned later in this chapter, have been determined to be unaffected by the proposal: air quality, prime/unique farmlands, floodplains, hazardous waste, and environmental justice.

4.1 Impacts of Alternative #1: Proposed Action

- **Public health and safety**:

Glyphosate has been extensively tested for safety and health effects. The Material Safety Data Sheet (MSDS) for Rodeo herbicide (a glyphosate formulation without surfactant) (the MSDS is available at http://www.cdms.net/LDat/mp4TN006.pdf) for instance describes these health effects (under the heading "Toxicological information"): "May cause slight temporary eye irritation." "It is "Essentially non-irritating to the skin." It has "Very low toxicity if swallowed." About inhalation the MSDS says "Brief exposure is not likely to cause adverse effects." For other target organ effects it says with glyphosate, "…..in animals, effects have been reported for the following organ: liver." About cancer effects, glyphosate "……did not cause cancer in laboratory animals." About mutagenicity the MSDS says for glyphosate "….in vitro and animal genetic toxicity studies were negative." About birth defects and reproductive effects the MSDS says that data are inadequate to make a determination. Because glyphosate has become one of the most widely used herbicides in the world since its introduction in 1974, if the compound caused reproductive effects or birth defects, it is unlikely these effects would have gone undetected this long. A Forest Service study evaluated numerous exposure scenarios for members of the public including direct spray, contact with contaminated vegetation, consumption of contaminated fruit, consumption of contaminated water, and consumption of contaminated fish, all on an acute basis. They also studied a similar set of chronic exposure scenarios. In all but one case they found no risk from the exposure to glyphosate, i.e., the evaluated scenarios created glyphosate exposures less than the reference dose of glyphosate (USDI BLM 2007, page 4-188, Table 4-30). A reference dose is defined as, "An estimate (with uncertainty spanning perhaps an order of magnitude) of a daily oral exposure to the human population (including sensitive subgroups) that is likely to not result in an appreciable risk of deleterious effects during a lifetime….." (USDI BLM 2007, page 7-14). The exception where there was a finding of risk was a low risk to human health with consumption of contaminated water from a pond spill, and only under the maximum application rate scenario. The application of Standard Operating Procedures (Table 2-8, USDI BLM 2007) including:

> Conduct mixing and loading operations in an area where an accidental spill would not contaminate an aquatic body.

would minimize the chances of any such accident. Ponds are virtually absent in the project area which is relatively steep throughout. However the Merced River and its tributaries are major features of this area. Relative to the stationary water of a pond, with the contamination of a stream or river there is dilution of contaminants, as well as movement of contaminants downstream that makes the impact at any one location transitory. Peak flows of the Merced River usually occur in late May, which is within the window for spraying (April, May, June). The dilution factor and speed of water movement are enhanced around the period of peak flows in the river, adding yet another safety factor. And the

maximum herbicide application rate will not be used. So even in the worst case modeled, a spill into water followed by human consumption of the water, (highly unlikely with the application of standard operating procedures), the low risk to human health described for someone drinking water after such a spill into a pond with the maximum application rate of herbicide would not apply to any realistic scenario from this project. As an additional safety measure, Mariposa Public Utility District, the utility that supplies drinking water to Mariposa from the Merced River, will be notified of spraying dates, so they could respond more quickly if there were to be a spill for instance.

- **Soils**:

Glyphosate is moderately persistent in soils with an estimated half-life of 47 days. It is broken down primarily by microbes. Glyphosate is tightly adsorbed to soil particles and inactivated by adsorption (USDI BLM 2007, page 4-19). Because of the spring application of the herbicide and the dearth of rainfall in the project area in summer, it is unlikely that there will be substantial rainfall and potential for any erosion-mediated transport of herbicide while the herbicide is still active. Enhanced erosion because of the loss of plant cover is not an issue for the herbicide portion of the project because spot spraying will leave most of the vegetation intact, so the treatment will not leave bare areas that would be subject to raindrop impact and susceptible to accelerated erosion. Often even those plants that are killed by herbicide will continue to provide some soil holding capacity by virtue of remaining roots. Soil productivity might be negatively influenced if there was microbial inhibition by glyphosate under field conditions. However Busse et al. (2004) cited in (USDI BLM 2007, page 4-19) studied ponderosa pine plantations and found that 9 to 13 years of glyphosate application had little effect on microbial communities.

Manual techniques, both hand pulling and digging of plants with a tool, produce loosened soil that is subject to erosion. However these techniques will be used primarily where the weeds are scattered, so only a small portion of the soil surface will be affected. And the disturbance with these techniques is relatively shallow.

- **Vegetation**:

Glyphosate is a non-selective herbicide. As such, it is likely to damage or kill most of the plants that are sprayed. By spot spraying with a wand, spray will be deliberately applied only to yellow starthistle and Italian thistle plants. Immediately adjacent plants will sometimes receive over-spray and some will be damaged or killed. Native annuals species hit by overspray will generally reoccupy much of the same habitat by the following growing season, because their persistent seed banks are unaffected by glyphosate. Perennials will often recolonize their habitats the next growing season as well, although it will generally take these plants longer to reach full stature and maturity. Also additional habitat will be opened up for native and non-native species when yellow starthistle and Italian thistle cover is reduced by spraying.

Because the Yellow starthistle and Italian thistle are not arranged in large continuous patches, no large areas will be sprayed and potentially cleared of vegetation. Instead small holes in the overall vegetation will occur when small pockets of plants die. The temporary loss of individuals of common species will not affect the vegetation long term.

A minimum 15' no-spray buffer will be observed around any plants of special status species, to protect these species from injury/mortality due to spray drift. .Except for a reduction of yellow starthistle and Italian thistle, the effects of the project on the vegetation should not be noticeable by the following growing season.

- **Riparian zones**:

Yellow starthistle is an upland species that is usually excluded from riparian zones. Italian thistle favors more mesic habitats and can sometimes be found at the edge of riparian habitat. Spraying in riparian habitat will generally not occur because the target weeds do not occur there. Streamside buffers of 25' will similarly limit spraying in riparian zones. If either target weed is found in riparian habitat it will generally be pulled. Often it is easy to dislodge these taprooted species from moist soil. If some areas are found where the weeds occur in abundance in the riparian zone, spraying will only occur if important native riparian perennials can be conserved. If the weeds and significant native perennials are so intermixed that spraying the weeds means spraying the native perennials, then control will be confined to manual/mechanical methods.

- **Terrestrial and Aquatic Wildlife**:

Forest Service studies have shown that at typical application rates there is low risk or zero risk to wildlife species from using the active ingredient glyphosate. Unlike other formulations of glyphosate like Roundup, formulations approved for aquatic use, (e.g., Rodeo, Aquamaster), do not contain the surfactant POEA. POEA has been shown to be damaging to amphibians. No POEA formulations of glyphosate will be used in this project.

Forest Service studies showed only two scenarios produced a moderate risk to terrestrial and airborne wildlife from the application of glyphosate (USDI BLM 2007, pages 4-106, 4-107): (1) at maximum application rates of glyphosate, there was a moderate risk to large and small mammals and to birds from direct spray and acute consumption of contaminated vegetation and insects, and (2) the direct spray of bees and other small animals, again only at the maximum application rate, similarly posed a moderate risk to these animals. However these moderate risks will not occur because herbicide will not be applied at maximum application rates in this project.

Other factors that reduce the potential for impacts include: (1) Because of the use of spot spraying and the patchy distribution of the yellow starthistle and Italian thistle, the acute consumption of sprayed vegetation or insects by wildlife is highly unlikely. In almost all cases the herbivore or insectivore would consume some sprayed food items and a much greater quantity of unsprayed food items, because only a small proportion of the area will be sprayed. Because of the use of typical rather than maximum application rates, even if there were acute consumption of sprayed food items there would be low risk to these animals. (2) Some bees and other small animals may be sprayed directly. As noted above, because of the use of typical rather than maximum application rates, there will be low risk to the individuals of these species that are sprayed at these concentrations. And because of spot spraying, only a small fraction of the local population of these species will be contacted by spray. Only those animals that are in exposed positions in the immediate vicinity of yellow starthistle or Italian thistle plants, and that don't disperse when the applicator arrives, are likely to be sprayed.

The use of a vegetable oil based adjuvant, (e.g., Competitor), or a crop oil concentrate adjuvant, (e.g., Agri-Dex), allows the increased efficacy provided by a surfactant but avoids the use of surfactants known to be toxic to aquatic wildlife. Polyethoxylated tallow amine (POEA) surfactants have been shown to be toxic to amphibians, and nonylphenolethoxylate (NPE) surfactants have been shown to be toxic to fish (rainbow trout were used in most studies) and some invertebrates, though usually at surfactant concentrations higher than normal application rates. To provide an extra margin of safety for aquatic wildlife, NPE surfactants will not be used in this project.

The ecological effects of both yellow starthistle and Italian thistle invasions have been studied. Both have been shown to displace native vegetation. Unlike the native vegetation it displaces, YST has little value for native wildlife. Because of the spines that it produces, YST can discourage access by wildlife even into areas that would otherwise provide forage or other resources. The control of yellow

starthistle and Italian thistle is likely to produce a net benefit for native wildlife species.

Threatened and endangered species: Three special status animal species are either known to occur or potentially occur in the project area.

Limestone salamanders and their habitat would be unaffected by spraying because the the steep north-facing habitat occupied by limestone salamanders generally does not support either of the target weed species.

Foothill yellow-legged frogs spend their entire life cycle in the water or the riparian area. Little if any spraying would occur in this area because neither weed species is riparian. The active ingredient glyphosate has been shown to be benign relative to amphibians. POEA, a surfactant that is used in Roundup, (a popular formulation of glyphosate), has been found to be damaging to amphibians. For this reason POEA surfactants will not be used in this project. NPE surfactants have been shown to injure some invertebrates. Invertebrates form part of the prey base for foothill yellow-legged frogs. This project will also avoid the use of NPE surfactants, substituting adjuvants that have been shown to be safer for fish and other aquatic organisms. It should be noted that at most, a negligible amount of spray drift should reach water because of the 25' buffer being left unsprayed around bodies of water, and the provision to cancel spraying if winds exceed 10 mph.

Because it forms the habitat for a federally listed species, the valley elderberry longhorn beetle, the US Fish and Wildlife Service has established guidelines for buffers for spraying around elderberry shrubs. BLM will observe the 100' buffer specified by the Service. With this generous buffer, and the prohibition of spraying when wind speeds exceed 10 mph, little if any herbicide drift should reach elderberry shrubs, and the beetles (if present) should be unaffected.

The seedlings of blue elderberry, the host species for valley elderberry longhorn beetle, might at times compete with one of the target weed species. If this competition were to occur, the proposed action would reduce that competition by suppressing the two weed species. However elderberry is scarce in the project area, and whether this competition ever does take place is unknown. This effect would be negligible, if it occurs at all.

- **Hydrology and water quality**:

This project should have little if any effect on the hydrology of any of the tributaries of the Merced River, much less the river itself.

Water quality effects should be negligible for several reasons. No spraying will occur within 25' of open water. Spot spraying will result in the application of only a small amount of herbicide. No spraying will occur if rain is predicted within 24 hours. The formulation of glyphosate chosen is without surfactant, (e.g., Rodeo, Aquamaster). Rodeo for instance is labeled for use in aquatic applications because it is practically non-toxic by ingestion (LD_{50} of 5600mg/kg in rats; reported by Extoxnet, a project of cooperative extension offices of Cornell, Oregon State Univ., Univ. of Idaho, Univ. of California Davis, Michigan State Univ.). Glyphosate is tightly adsorbed to soil particles and has low potential for runoff or leaching.

The estimated half life of glyphosate in water is 12 days to 10 weeks. However it is rapidly deactivated in surface waters by adsorption on organic matter and clay particles and by biodegradation. Glyphosate is unlikely to be carried into rivers or streams by runoff or groundwater because it is so readily adsorbed on soil particles (USDI BLM 2007, page 4-30).

Drinking water from the Merced River is withdrawn at the Saxon Creek pump station, a little more than 1 mile downstream of Briceburg, within the project area. Pumping is seasonal, mostly in the summer or fall months.

Drinking water is withdrawn from Lake McClure, an impoundment of the Merced River, near Barrett Cove by the Lake Don Pedro Community Services District. It lies downstream of the project area by more than 10 miles. There is a label restriction for Rodeo herbicide (the Rodeo label is available at: http://www.cdms.net/LDat/ld4TN010.pdf):

> Do not apply this product directly to water within ½ mile up-stream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within ½ mile of an active potable water intake in a standing body of water such as lake, pond or reservoir.....

Aquamaster, a similar glyphosate formulation for aquatic applications, has a very similar label restriction.

These restrictions would not apply in this instance. No herbicide will be applied directly to water. The label states, "This restriction does not apply to intermittent inadvertent overspray of water in terrestrial use sites." A 25' spray-buffer will be applied around any body of water. This exceeds the safety criterion established in BLM's Standard Operating Procedures which call for a 10' buffer for hand spray applications. Drift will be minimized by applying the Standard Operating Procedure that calls for canceling spraying when wind speeds exceed 10 miles per hour. Hand spraying itself minimizes drift by the low height at which the spray is released and the much lower volume of spray mix needed to only spray target plants.

BLM will comply with Mariposa Utility District's request to be notified of spray days, so they could respond promptly if there were ever to be a spill.

- **Fish and other aquatic organisms**:

A glyphosate formulation without surfactant like Rodeo will be used in this project. The material safety data sheet for Rodeo herbicide states that the material is "practically non-toxic to aquatic organisms on an acute basis (LC_{50} or EC_{50} is > 100mg/L in most sensitive species tested)". Because of the nature of flowing water, chronic exposure will not occur. A Forest Service study found that with the less toxic formulations of glyphosate, like those to be used in this project, even under a routine acute exposure scenario, there is a low risk to most aquatic organisms, and a moderate risk to sensitive fish species (USDI BLM 2007, page 4-85). Tadpoles have been found to be very sensitive to the surfactant POEA included in popular formulations of glyphosate (e.g. Roundup). However formulations that lack the surfactant, like Rodeo, have been found to be relatively non-toxic (Relyea 2005).

Surfactants containing nonylphenolpolyethoxylates (NPE) have been shown to be toxic to a number of aquatic organisms, including rainbow trout and some invertebrates, although test treatments that showed adverse impacts were often at higher concentrations of the surfactant than normal application rates (Bakke 2003; Monheit 2004). To provide an extra margin of safety for aquatic organisms, no NPE surfactants will be used in this project.

- **Recreation**:

Except for the day of spraying, there should be no impact to recreation from this project. The day of spraying, signs will be posted to indicate that spraying is occurring, and this may deter some visitors from using the area. If there are visitors they will be asked to leave the immediate vicinity of target sites before they are sprayed, so no visitors are subjected to spray drift. After the herbicide has been

applied and taken effect, some small patches of dead or dying vegetation may be noticed. Because of spot spraying, the vast majority of the vegetation will remain intact, mostly shielding the small dead zones from view.

- **Visual resources**:

The appearance of the landscape might be temporarily somewhat altered by the death of yellow starthistle and Italian thistle plants. But because of the spot spraying approach, these dead plants will be surrounded by live vegetation, and in general the dead plants will not be obvious. Because the plants usually will be sprayed at the rosette stage, unsightly persistent large dead skeletons of yellow starthistle or Italian thistle will not develop. The long term effect of weed control will be to restore the natural appearance of the landscape as weeds are reduced over time. This project is consistent with all VRM classes.

- **Cultural resources**:

Because of the use of herbicide to accomplish weed control, no ground disturbance will occur. For this reason there will be no effects to material cultural resources, like prehistoric native American sites and historic sites.

BLM has initiated tribal consultation by mailings to local Indian groups to ascertain if they have any concerns about this project. Of particular relevance were inquiries as to whether there were traditional collecting areas for plant materials at the project site. If traditional collecting sites occur within the project area, BLM will work with the appropriate tribe to address their concerns. A no-spray zone may be established to avoid impacts to the habitat at the collecting site.

- **Fire/fuels**:

The control of these two weed species will affect the fuel loading in areas where the weeds already occur, and areas that would become infested in the future if no weed control takes place. Yellow starthistle in particular, because it can form large nearly monospecific stands, can be a major component of fuels. However, as the Telegraph Fire demonstrated, the landscape level fuels in this area are dominated by chaparral, a community that is little susceptible to weed invasion. Weed control may affect fuels at a small scale, but larger fires in this area will be little affected by the presence or absence of these weed species.

- **Social/agricultural**:

This project will produce minor effects for the grazing leases in the project area. Unlike some other herbicides, aquatically labeled glyphosate formulations without pre-mixed surfactant have no labeled grazing restrictions (except for grazing by lactating dairy cows). Cattle avoid yellow starthistle once the spiny heads have been produced. Because YST can inhibit cattle access and replace more palatable plant species, the reduction yellow starthistle plants on the leases would be of benefit to the grazing lessees.

- **Non-native weeds**:

This project is specifically designed to control yellow starthistle and Italian thistle, important weeds of the foothills of the Sierra Nevada. The U.S. Forest Service and the National Park Service are actively engaged in controlling their occurrences of these species in the watershed. Mariposa County Department of Agriculture is spraying on private land as well. This project has the potential to be part of an area-wide control of this weed in the Merced River drainage. Because there is extensive travel among the lands managed by the three federal agencies, creating the potential for vehicles to transport weed seed among jurisdictions, control on all of the federal lands is the most effective way to make progress against these alien species.

4.2 Impacts of Alternative #2: Manual-Removal-Only Alternative

This alternative was eliminated from further analysis because there are insufficient personnel to implement this approach, (see section 2.3).

4.3 Impacts of Alternative #3: No-Action

- **Public health and safety**: No impact.

- **Soils**: No impact. No ground disturbance.

- **Vegetation**:

With the no-action alternative, expansion of existing yellow starthistle and Italian thistle populations would occur, especially into the open niches provided by the fire and fire suppression. It is also likely that at least some weed seed was transported by vehicles/equipment during the fire suppression and rehabilitation effort, potentially creating new colonies of the weed species from which additional spread can occur. These species would continue to displace native vegetation on the public land.

- **Riparian zones**:

Little impact to riparian zones would be anticipated because neither weed species is riparian in character. Of the two weed species, Italian thistle is more likely to occupy mesic habitats adjacent to riparian zones.

- **Wildlife**:

Yellow starthistle has been shown to limit wildlife access especially in its mature spiny stages. It is of limited utility to wildlife. By displacing native vegetation and denying access to other resources, yellow starthistle can degrade wildlife habitat. The no-action alternative would allow more habitat to become infested with the target weed species, degrading the habitat for most wildlife.

- **Fish and other aquatic organisms**: No impact.

- **Threatened and endangered species**:

Three species of special status animals are either known to occur or potentially occur in the project area.

Limestone salamander would be unaffected because the the steep north-facing habitat occupied by limestone salamander generally does not support either of these weed species.

Foothill yellow-legged frogs spend their entire life cycle in the water or the riparian area. Upland weed increases that might occur with the no-action alternative would not directly affect this species. To the extent that these tap-rooted weeds are less able to hold soils and retard erosion than other plant species with more-fibrous root systems, weed increases might allow some increase of sedimentation of creeks of the project area. Because the watersheds involved are large relative to habitat with good potential to support weed populations, it is thought that sedimentation changes due to weed increases would be small. It is possible that in some particular locales weed increases resulting from the no-action alternative could lead to an increase in sedimentation. High levels of sedimentation may inhibit the attachment of egg masses to the substrate. Excessive accumulation of silt on the egg masses may have adverse effects on embryo development. Silt reduces the interstitial spaces available for use by tadpoles, reduces algal growth on which the tadpoles feed, and can have significant negative impacts

on aquatic macroinvertebrates, in turn affecting the adult foothill yellow-legged frog prey base. However it is thought that even locally it would be hard to detect such changes in sediment load and frog habitat degradation resulting simply from an increase of these upland weed species.

The seedlings of blue elderberry, the host species for valley elderberry longhorn beetle, might at times compete with one of the target weed species. If this competition were to occur, the no –action alternative would make that competition more likely, by making increases of the two weed species more probable. However elderberry is scarce in the project area, and whether this competition ever does take place is unknown. This effect would be negligible, if it occurs at all.

- **Hydrology and water quality**: No impact.

- **Recreation**:

Because of its spiny nature, yellow starthistle deters the use of lands for recreation. Some of the fire lines created during fire suppression were anchored to existing roads/trails. If weed infestations become established from weed spread during fire suppression, this could deter the use of these roads/trails. Even if the trails are passable, travel through a corridor of yellow starthistle can feel inhospitable and appear unattractive. The no-action alternative is more likely to allow such infestations to occur, persist and increase.

- **Visual resources**:

The Merced River corridor is a heavily used recreation area, associated with the boating use of the Merced Wild and Scenic River and with visitation of Yosemite National Park. Increases of tall weedy species that shade out native species can affect the appearance of the landscape. The no-action alternative, by limiting weed control options, has the potential to allow the further degradation of the visual resources of the canyon.

- **Cultural**: No impact.

- **Fire/fuels**:

Unknown impact. Yellow starthistle stays green later in the season than most other annual species, so it is likely to dampen early-season fires. Spring season controlled burns often will not carry across fields that are nearly monocultures of yellow starthistle. Late season fires might be variably affected depending on the species that the weeds replace on the landscape. In chaparral habitat, even without control, the weed species are unlikely to occupy habitat beyond disturbed corridors. The contribution of the weed species to the overall fuel profile of the landscape would not be important. However in grassland or savannah habitat, yellow starthistle in particular can become a dominant species. Because yellow starthistle favors deeper soils, it is more likely to dominate on alluvium or shallower slopes. In these locations it could form a significant proportion of total fuels. The no-action alternative would likely permit the increase of these weed species and cause a change in the fuel profile for those areas that become infested.

- **Social/agricultural**:

Without control of yellow starthistle and Italian thistle on BLM public lands, efforts by the U.S. Forest Service, National Park Service and Mariposa County Department of Agriculture to control these invasive species on a watershed basis would be frustrated. The public land would act as a sanctuary for these species, from which they could reinfest adjacent public and private lands..

- **Non-native weeds**:

Under the no-action alternative yellow starthistle and Italian thistle would be able to exploit new

habitats created by the disturbance of the Telegraph Fire and the associated fire suppression effort. In the construction of fire lines many miles of ground was cleared with tractors, eliminating all vegetation. In these areas the potential for weed spread is great. During the fire and its aftermath there was great potential for weed introductions, because of the large number of pieces of equipment and vehicles that participated in the fire suppression and rehabilitation effort. Much of the equipment and many vehicles arrived from distant locations. The "early detection, rapid response" approach is based on the observation that a timely weed control response, especially in the first year after weed is introduced to a new area, has the potential to nip new infestations in the bud. A weed infestation can be suppressed much more easily before it becomes established by creating a seed bank and growing in numbers. The no-action alternative would not provide the flexibility for such a timely response to new weed infestations.

- **Special land use designations**:

Wilderness study areas like the Merced River Wilderness Study Area are managed under non-impairment criteria. The concept is to not compromise the suitability of such areas to be included in the wilderness system, should Congress make that legislative decision. Wilderness areas are managed to maintain their natural state, so that the imprint of man is minimized. In the Wilderness Act of 1964, wilderness is described as:

> ....an area where the earth and its community of life are untrammeled by man....

and:

> ....generally appears to have been affected primarily by the forces of nature,....

Visible weed infestations, especially tall obvious weeds like yellow starthistle and Italian thistle that can dominate a landscape are inconsistent with one core purpose of wilderness. The no-action alternative would allow the degradation of wilderness/wilderness study area values by allowing the increase of these weed species.

The wild segment of the Merced Wild and Scenic River is also affected by changes in weed populations. Like wilderness, a natural landscape is envisioned for designated wild rivers under the Wild and Scenic Rivers Act of 1968:

> Wild river areas---.....with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

The no-action alternative, because it would allow an increase of two alien weed species, is inconsistent with the wild designation of the downstream portion of the Merced River in the project area.

The Limestone Salamander ACEC will be unaffected by the no-action alternative because there is little if any overlap between the habitat of the weed species being addressed and the habitat of limestone salamander, the resource for which the ACEC was designated. Even without control, these weeds are unlikely to affect limestone salamander habitat.

4.3 Cumulative Impacts

The U.S. Forest Service has been controlling yellow starthistle in the Merced River canyon for several years. They used glyphoste in 2006 and 2007 and they have used manual/mechanical methods over a longer period. They did not use herbicides for yellow starthistle control in 2008 because the success of the first 2 years of spraying reduced the population to a level where herbicide use became unnecessary.

But with the possibility of weed spread in the aftermath of the Telegraph Fire, USFS use of herbicides may be renewed.

Yosemite National Park is launching a program of integrated pest management including herbicide use under a new weed management plan completed in 2008. Their planning calls for the use of two herbicides, glyphosate and aminopyralid. The use of glyphosate in the park will be in addition to the BLM and (potential) USFS use of this herbicide in the watershed. All 3 agencies are taking a very conservative approach to the use of herbicides. For instance the NPS plan calls for using herbicides on yellow starthistle only if the occurrence is on steep slopes or difficult to access. As stated above, the USFS curtailed spraying as soon as weed numbers came down to a level where manual/mechanical control was practical. BLM's reluctance to use herbicides is indicated by a decade-long control effort for yellow starthistle using only manual/mechanical methods. Low levels of use, the tendency for this herbicide to be adsorbed on soil particles, and the relatively rapid degradation of the herbicide, taken together mean that little of the chemical will reach the Merced River where it might otherwise accumulate. But even in water glyphosate is readily adsorbed on organic matter and clays, deactivated and degraded, so it has little potential to accumulate.

The cumulative impact of controlling yellow starthistle and Italian thistle on federal land under three jurisdictions (National Park Service, U.S. Forest Service and BLM) and on private lands in this area will be synergistic in terms of weed control. The US Forest Service has an ongoing program of control of yellow starthistle in the Merced River corridor. In the aftermath of the Telegraph fire they received BAER (Burned Area Emergency Response) funding for inventory and control of weeds, with a focus on those that came into the fire area with fire suppression. The National Park Service completed an Invasive Plant Management Plan for Yosemite National Park in June 2008. This plan calls for the control yellow starthistle and Italian thistle. These 2 species are among a list of 9 species with the highest priority for control inside the park. Because there is steady vehicle traffic between BLM lands and the land of the other two federal agencies, especially recreation traffic associated with white water boating, it is important that weeds on all three jurisdictions be addressed simultaneously. With a comprehensive program, federal lands managed by one agency where control measures occur and yellow starthistle and Italian thistle are effectively contained will not be at risk of reinfestation from propagules from other federal lands where no control is being attempted, or control is spotty.

5.0 Agencies and Persons Consulted

Outside agencies contacted

Mariposa County Department of Agriculture
California Department of Food and Agriculture

5.1 BLM Interdisciplinary Team

		Signature	Date
James Barnes	Archaeologist, NEPA Coordinator		4/22/09
Peggy Cranston	Wildlife biologist/range conservationist	Peggy Cranston	4/22/09
Al Franklin	Botanist		4/27/09

5.2 Availability of Document and Comment Procedures

The EA, posted on Folsom Field Office's website (www.blm.gov/ca/folsom)

6.0 References

Bakke, D. 2003. Human and ecological risk assessment of nonylphenol polyethoxylate-based (NPE) surfactants in Forest Service herbicide applications. Unpublished report, USDA Forest Service, Pacific Southwest Region (Region 5).

Monheit, S., J.R. Leavitt, and J. Trumbo. 2004. The ecotoxicology of surfactants used with glyphosate based herbicides. *Noxious Times* 6(2): 6-12.

Relyea, R.A. 2005. The Impact of Insecticides and Herbicides on the Biodiversity and Productivity of Aquatic Communities. *Ecological Applications* 15(2): 618-627.

U.S. Department of Interior Bureau of Land Management (USDI BLM). 2007. Record of Decision, Vegetation Treatments using Herbicides on Bureau of Land Management Lands in 17 Western States, Programmatic Environmental Impact Statement. Reno, NV.

U.S. Department of Interior Bureau of Land Management (USDI BLM). 2008. Record of Decision, Sierra Resource Management Plan. BLM-Folsom Field Office, Folsom, CA.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
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Herbicide Use on Public Lands within the Telegraph Fire Burned Area (CA-180-09-031) Finding of No Significant Impact May 2009

It is my determination that this decision will not result in significant impacts to the quality of the human environment. Anticipated impacts are within the range of impacts addressed by the Sierra RMP. Thus, the project does not constitute a major federal action having a significant effect on the human environment; therefore, an environmental impact statement (EIS) is not necessary and will not be prepared. This conclusion is based on my consideration of CEQ's following criteria for significance (40 CFR §1508.27), regarding the context and intensity of the impacts described in the EA and based on my understanding of the project:

1) *Impacts can be both beneficial and adverse and a significant effect may exist regardless of the perceived balance of effects.* Potential impacts are minor, including the mortality of target non-native noxious weed, some mortality of nearby non-target plants (native and non-native) affected by overspray, slight increases of competing vegetation when the weed's habitat is cleared.

2) *The degree of the impact on public health or safety.* No aspects of the project have been identified as having the potential to significantly and adversely impact public health or safety.

3) *Unique characteristics of the geographic area.* This project area is typical of this portion of the Sierra Nevada foothills with characteristic topography, geology and soils.

4) *The degree to which the effects on the quality of the human environment are likely to be highly controversial effects.* No anticipated effects have been identified that are scientifically controversial. As a factor for determining within the meaning of 40 C.F.R. § 1508.27(b)(4) whether or not to prepare a detailed environmental impact statement, "controversy" is not equated with "the existence of opposition to a use." *Northwest Environmental Defense Center v. Bonneville Power Administration*, 117 F.3d 1520, 1536 (9th Cir. 1997). "The term 'highly controversial' refers to instances in which 'a substantial dispute exists as to the size, nature, or effect of the major federal action rather than the mere existence of opposition to a use.'" *Hells Canyon Preservation Council v. Jacoby*, 9 F.Supp.2d 1216, 1242 (D. Or. 1998).

5) *The degree to which the possible effects on the human environment are likely to be highly uncertain or involve unique or unknown risks.* The analysis does not show that this action would involve any unique or unknown risks.

6) *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.* This action does not establish a precedent for future actions.

7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. The primary cumulative impact worth noting is the synergistic effect of the ongoing programs to control yellow starthistle and Italian thistle on BLM, U.S. Forest Service and National Park Service lands in the Merced River drainage. This combined effort, along with similar efforts on private lands coordinated by the Mariposa County Department of Agriculture, has the potential to control these weeds at a manageable level across a large geographic region. By comprehensively addressing the accessible occurrences of these weed species and not leaving behind remnant weed populations with the potential to act as reservoirs of seed, the likelihood of losing control of these weed species is reduced. No significant adverse site specific or cumulative impacts have been identified. The project is consistent with the actions and impacts anticipated in the Sierra MFP, as amended.

8) The degree to which the action may adversely affect National Historic Register listed or eligible to be listed sites or may cause loss or destruction of significant scientific, cultural or historical resources. The project area will not adversely affect any sites listed on the National Register of Historic Places or properties known to be eligible.

9) The degree to which the action may adversely affect ESA listed species or critical habitat. The only ESA listed species (or their habitat) known or suspected to occur in the project area is valley elderberry longhorn beetle. Its host shrub, blue elderberry, does occur in the project area. The presence of the beetle has not been confirmed. Because BLM will observe a minimum 100' spray buffer around any elderberry shrubs, and cancel spraying if wind speeds exceed 10 mph, there should be no effects to the beetle or its host plant.

10) Whether the action threatens a violation of environmental protection law or requirements. There is no indication that this decision will result in actions that will threaten such a violation.

William S. Haigh
Manager, Folsom Field Office

5-18-09
Date

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
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Herbicide Use on Public Lands in Telegraph Fire Burned Area (CA-180-09-31)
Decision Record
May 2009

1.0 Introduction and Background

The Bureau of Land Management (BLM) will use herbicide to protect and enhance habitats and species within the area burned by the Telegraph Fire in Mariposa County, California. In general, the proposed action would provide for enhancement, and management of ecological values, ecosystem function, and wildlife habitat in areas burned by the Telegraph Fire and affected by suppression efforts during the fire. The proposed action includes using herbicides and mechanical techniques to control non-native and invasive weeds and to enhance or restore habitat. Based on information in the EA, the project record, and recommendations from BLM staff specialists, the following constitutes my decision.

2.0 Decision and Rationale

2.1 Alternatives Considered but not Selected

Alternative # 2: Using only manual/mechanical methods, expand the present program of yellow starthistle control to include the Telegraph Fire area, and add Italian thistle control

Alternative #3: No additional weed control in response to the Telegraph Fire

2.2 Decision and Rationale

Based on information in the EA and consultation with my staff, I have decided to implement the proposed action (Alternative # 1) as described in the EA. There are no time restrictions on implementation of this action.

3.0 Consultation and Coordination

No consultation with the US Fish and Wildlife Service was necessary.

4.0 Public Involvement

The EA was released to the public for a 15-day public-review comment period. No comments were received from the public. The primary method of sharing the EA with the public was by posting it on the Bureau of Land Management's (BLM) Folsom Field Office website, and by sending notices to Native American groups geographically associated with the project area.

The BLM prepared this Environmental Assessment that considered potential impacts and alternatives to the Plan, consistent with NEPA. A copy of the Environmental Assessment is available from BLM's Folsom Field Office website.

5.0 Plan Consistency

Based on information in the EA, the project record, and recommendations from BLM specialists, I conclude that this decision is consistent with the 2008 Sierra RMP, the Endangered Species Act; the Native American Religious Freedom Act; other cultural resource management laws and regulations; Executive Order 12898 regarding Environmental Justice; and Executive Order 13212 regarding potential adverse impacts to energy development, production, supply and/or distribution.

6.0 Administrative Remedies

Administrative remedies may be available to those who believe they will be adversely affected by this decision. Appeals may be made to the Office of Hearings and Appeals, Office of the Secretary, U.S. Department of Interior, Board of Land Appeals (Board) in strict compliance with the regulations in 43 CFR Part 4. Notices of appeal must be filed in this office within 30 days after publication of this decision. If a notice of appeal does not include a statement of reasons, such statement must be filed with this office and the Board within 30 days after the notice of appeal is filed. The notice of appeal and any statement of reasons, written arguments, or briefs must also be served upon the Regional Solicitor, Pacific Southwest Region, U.S. Department of Interior, 2800 Cottage Way, E-1712, Sacramento, CA 95825.

The effective date of this decision (and the date initiating the appeal period) will be the date this notice of decision is posted on BLM's (Folsom Field Office) internet website.

William S. Haigh
Manager, Folsom Field Office

5-18-09
Date