Appendix E: Photo Journal

Photo E-1: NASA imagery on September 7, 2014, showing the smoke plume from the Happy Camp Complex fires.

Photo E-2: Example of air quality issues during the 2014 fires within the Westside Fire Recovery Project area. Residents within northern California and southern Oregon experienced continued weeks of heavy smoke accumulation and low air quality during the 2014 fire

Photo E-3: A smoke column generated by high intensity fire on the Happy Camp Complex. Pre-fire heavy fuel loading conditions contributed to the stand-replacing nature of the fire and its large smoke column. The smoke column carried burning embers aloft, spotting fires ¼ to ½ mile downwind of the fire and accelerating fire spread.

Photo E-4: A fuel break constructed within the Happy Camp Fire, which was used by firefighters for fire suppression. This is an example of moderate to high intensity fire that resulted in nearly total stand mortality. Photo taken on September 4, 2014.

Photo E-5 Low to moderate intensity surface fire activity occurred when the weather conditions and terrain created air inversion layers, which trapped smoke above the fire and reduced fire behavior. Air inversions have reduced fire behavior because of decreased solar radiation, decreased temperatures, and increased fuel moisture at the ground surface. Air inversions were most frequent in the mornings and early afternoons.

Photo E-6: An illustration of fire activity after the air inversion lifted, resulting in extreme fire behaviors. Moderate to high severity fires (>50% tree mortality) occurred within 33% of the project area.

Photo E-7: Example of a mixed severity area within the Westside Fire Recovery project. Along the bottom of the photo, low severity burns can be seen, along with moderate severity in the middle of the photo and high severity along the hillside ridgeline.

Photo E-8: Photo of a large high severity patch within the East Fork of the Walker Creek drainage. Areas like these are proposed for salvage harvest within the Westside Fire Recovery project.

Photo E-9: A high severity burned area above the Scott River Road near Scott Bar, California. Although fire-killed trees still bear needles immediately following the fire, most trees within high severity burn areas are expected to die. Insects (primarily beetles), stain and decay fungi, and weather all act as deterioration agents in fire-killed timber.

Photo E-10: Example of 100% mortality of trees within the Beaver Fire area. Note the lack of groundcover and burned out stumps, which is an indication of a high intensity burned area.

Photo E-11: A high severity burned area within the Beaver Fire area. Note the lack of groundcover and burned out stumps, which is an indication of a high intensity burned area.

Photo E-12: An area of high severity burn within the Westside Fire Recovery project with Tanners Peak in the background. Tanners peak is within an Inventoried Roadless Area where no salvage harvest is proposed.

Photo E-13: Example of a mixed severity patch. Areas within patches that experienced high severity burns are proposed for salvage harvest under alternative 2 of the Westside Fire Recovery project.

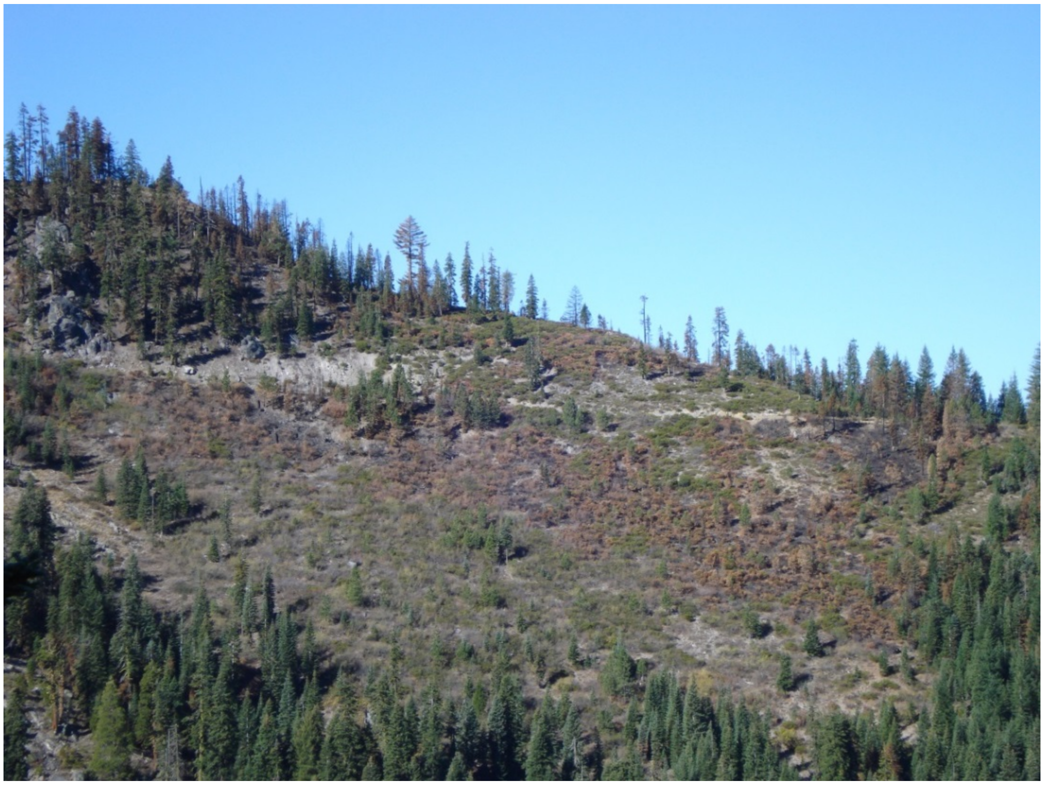

Photo E-14: A plantation that experienced low severity burns and has been excluded from site preparation and reforestation due to the presence of green seed trees, its upper slope position, and the existing vegetation.

Photo E-15: Stand that burned at high severity and is proposed for fuels treatment in order to reduce standing fuels and to promote oak regeneration.

Photo E-16: High severity fire effects on the Happy Camp Complex. The fire consumed duff and needle cast, small branches, and large downed woody material, resulting in low surface fuel loading in the existing condition. Within the canopy, full consumption of leaf and needle foliage occurred, leaving standing dead trees and barren soils. As snags continue to decay, break, and fall, surface fuel loading and the severity and intensity of future fires will increase. Increased fire intensities and fallen snags will inhibit the effective control of future fires and/or put fire suppression crews at increased risk.

Photo E-17: Canopy view of a high fire severity patch within the Whites Fire. Most of the needles are gone.

Photo E-18: Moderate to high severity fire areas within surface and mid-story canopy fuels. Surface fuel loadings were primarily fully consumed during the fires. Pockets of larger downed fuels remain visible on the surface.

Photo E-19: Moderate to high severity fire within canopy fuels. The crown fuel profile varies with some trees being consumed by the fire and other trees retaining needles in the tree canopy.

Photo E-20: A typical area where roadside hazard treatment is proposed with the Westside Fire Recovery project (chapter 2). Patches of green trees can be seen along with patches of trees that experienced high burn severity.

Photo E-21: A roadway that experienced high burn severity during the 2014 fires. Areas such as this will receive roadside hazard treatment under the action alternatives of the Westside Fire Recovery project (see chapter 2).

Photo E-22: Example of an area that would be treated using salvage harvest and preparation and planting, above and below the roadway.

Photo E-23: An example of a fallen fire-killed tree along a roadway, affecting the safety and access of forest workers and the public.

Photo E-24: Example of an area that would receive site preparation and planting under alternative 2 of the Westside Fire Recovery project. High severity burns can be seen in the foreground of the photo.

Photo E-25: Example of a high severity burned area in the foreground with mixed severity in the background.

Photo E-26: A mixed severity area in the background with a high severity area in the foreground with little to no ground cover. The high severity area is an example of the type of area proposed for treatment.

Photo E-27: Stand with a mixture of hardwood components and remnant large tree stumps. The area on the east facing aspect on a middle one-third slope is proposed for hand-cutting, piling and burning, and planting.

Photo E-28: Unit within the Beaver Fire area proposed for site preparation using mastication and planting. Mastication was chosen due to favorable machine access, gentle slope percent, the diameter of material on site, and the low levels of existing ground fuel.

Photo E-29: An example of an untreated area in 2012, ten years after the 2002 Stanza Fire, which was located adjacent to the Happy Camp Complex on the Klamath National Forest. Note the volume of standing and felled snags intermixed with brush. Without treatment (alternative 1), areas within the Westside Fire Recovery project can be expected to have similar fuels loading conditions ten years from now, increasing their susceptibility to high severity fire.

Photo E-30: Firefighters survey multiple burning snags and employ tactics to safely build line to control the fire. The weakened trees pose a risk to firefighters, both from falling and producing spot fires ahead of the main fire. Without treatment within the Westside Fire Recovery project area, it will be difficult to suppress large fires in the future.

Photo E-31: Photos displaying a pre-and-post fire condition from the 2012 Chips Fire on the Plumas and Lassen National Forests in northern California. These photos highlight the reburn potential within a 12 year old fire scar of the 2000 Storrie Fire. Shrub regrowth among standing snags created high severity fire effects within the footprint of the 2000 Storrie Fire. Heavy consumption of shrub, herb, grass, snag and downed fuels is evident. The Chips Fire, also subjected to daily thermal inversions like the 2014 fires in this project, started and burned for a long period of time within steep drainages of the Feather River Canyon.

Photo E-32: Salvage and site preparation activities on the Klamath National Forest Salmon Salvage project, adjacent to the Whites Fire. Trees are cut and removed from the site, with follow-up hand piling to meet surface fuel loading criteria sufficient for low intensity fire. Similar activities are proposed in the Westside Fire Recovery project (chapter 2).

Photo E-33: A masticated fuel bed. Brush and small trees have been mulched to reduce surface fuel bed depth to less than two inches.

Photo E-34: Without action, fire-killed trees will fall over time in "jack-strawed" patterns, increasing fuel bed height above the ground surface. Higher surface fuel beds are subject to wind and preheating of fuels lower in the surface fuel profile, increasing fire behavior potential. Under alternative 2 of the Westside Fire Recovery project, where mastication is identified as a treatment option, chipped material will create a compact fuel bed. Masticated material would also decay faster due to its proximity to the ground and increased fuel moisture conditions. Under the action alternatives, fire-killed trees will be removed before they fall and become "jack-strawed," improving fuel conditions as well as foot travel and safety conditions for forest workers and firefighters during suppression efforts.

Photo E-35: Walker Creek in the Happy Camp Complex area. While significant portions of the watershed burned at moderate and high severity in 2014 (as can be seen in the photo), the main stem valley bottom was left mostly unburned.

Photo E-36: An example of an existing legacy site within the project area where erosion has been an issue. The treatment of this legacy site is proposed for this project in all action alternatives. If this legacy site is not treated, then future erosion and subsequent negative impacts to watershed conditions are likely.