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CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Part 19 – Noxious and Invasive Weeds

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Noxious and Invasive Weeds

Scope of Analysis and Indicators of Effects

The noxious and invasive weed species considered for analysis in this document are based on the Forest Service Region 5 list of highly invasive weeds (List A) and exotic or noxious weeds (List B) known or suspected to occur on the Eldorado National Forest, and all plant species defined by California state or federal statute as "noxious." The Region 5 Noxious Weed Management Strategy (USDA FS, 2000) and all other state, federal, and local laws pertaining to noxious and invasive weeds apply to this project.

The geographic scope of direct, indirect, and cumulative effects analysis for noxious and invasive weeds in the proposed project area, which is defined for noxious weed assessment as a 100-foot corridor centered over the proposed buried power line alignment, including alternative alignments, a 200-foot corridor centered on the existing overhead power line alignment, and all proposed staging areas.

The objective of the project design criteria for noxious weeds, found in Chapter 2, is to prevent the spread or introduction of noxious weeds within the project area. Indicators of design criteria implementation include flagging noxious weed populations in the project area during the preconstruction field survey, retention of the weed flagging throughout construction activities, and timely identification and reporting of new noxious weed occurrences in the project area. The Sierra Nevada Forest Plan Amendment (USDA FS, 2004) and the Region 5 Noxious Weed Management Strategy (USDA FS, 2000) require a noxious weed assessment be conducted to determine risks for weed spread associated with different proposed management activities.

Affected Environment

Environmental Setting

Characterization of weed species occurring within and near the KMPUD Power Line Reliability project area was obtained through a project-specific noxious weed survey conducted in August 2010 (RCI, 2010), review of ENF and county weed GIS databases, and consultation with the ENF botanist and the counties' Departments of Agriculture. This data was used to prepare a Noxious Weed Risk Assessment, as required by the Sierra Nevada Forest Plan Amendment and the Region 5 Noxious Weed Management Strategy. The Noxious Weed Risk Assessment provides the basis of the following effects analysis and is located in the project record.

The mapped weed locations are illustrated in Figure 35. The 2010 field survey identified nine (9) weed species listed by the ENF Service and California Department of Food and Agriculture (CDFA)

as noxious or invasive within the project area. Three of these species are listed as ENF List A priority species and include perennial pepperweed and Canada thistle, both of which are located on private land in KMR and are included as List B species by the CDFA; and yellow starthistle located on ENF at the intersection of Highway 88 with the Bear River Road and listed by the CDFA as a List C species (a species of concern but not regulated as strongly as List A or B species). The occurrences of perennial pepperweed and Canada thistle within Alpine and El Dorado county portions of Kirkwood are currently being monitored and treated by the El Dorado County Agricultural Department. The occurrence of yellow starthistle is currently being monitored and treated by the ENF Forest Service.

In addition to these priority weed species, five (5) other state listed and ENF List B invasive weed species were located within the project area, and existing agency weed mapping from the ENF and the counties identified six (6) additional species located near the project area. Table 3-82 lists the noxious and invasive weeds located within or in close proximity to the project area and occurrences are shown by species on Figure 35. The map and table include weed species listed by California Department of Food and Agriculture as List A, B, and C noxious weed species and by the ENF as List A (highly invasive) and List B species (noxious weeds) that have been recorded in ENF Service and county regional weed mapping databases and identified during 2010 project surveys. None of the identified weed species meet the definition of a noxious weed under the Federal Noxious Weed Act of 1974 (7 USC 2802(c)).

Table 3-82. Noxious and Invasive Weeds Occurring Within or Close to the Project Area

Common Name	Scientific Name	CDFA ¹	ENF ²	Located within Project Area?
Russian knapweed	<i>Acroptilon repens</i>	B	A	No. Previously documented by ENF on Segment 11. Not observed in 2010.
Cheatgrass	<i>Bromus tectorum</i>	--	B	Yes. Staging areas 1 and 4; shoulder of road in Segments 3, 5, 6, and 18.
Diffuse knapweed	<i>Centaurea diffusa</i>	A	A	No. Previously documented along Hwy 88 near Segments 5 and 6, and at 2 locations on Kirkwood Meadow Drive (Segment Alt 3:21). Not observed in 2010 survey.
Spotted knapweed	<i>Centaurea maculosa</i>	A	A	No. Previously documented on Bear River Road (Segment 3), but not observed in 2010. Also documented in 4 locations on Hwy 88 outside project area.
Yellow starthistle	<i>Centaurea solstitialis</i>	C	A	Yes. Intersection of Hwy 88 and Bear River Road (Segment 3). One other isolated occurrence documented on Hwy 88, 0.3 miles outside project area.
Canada thistle	<i>Cirsium arvense</i>	B	A	Yes. One occurrence documented in 2010 on Segment 21 at Kirkwood Inn. Previously documented on Hwy 88 within project area segment Alt 3:18 and Segment 20 near Carson Spur.

Common Name	Scientific Name	CDFA ¹	ENF ²	Located within Project Area?
Bull thistle	<i>Cirsium vulgare</i>	C	B	Yes. Four small occurrences (<15 plants) on Segment 3 road shoulder. One occurrence on Hwy 88 across from Alt 3: 21, and on Alt 3:21 within Kirkwood (Kirkwood Meadow Dr.)
Oblong spurge	<i>Euphorbia oblongata</i>	B	A	No. Not documented within project corridor, but known to occur on ENF. Nearest occurrence is 5 miles west of Hwy 88 and Bear River Road junction.
Klamathweed	<i>Hypericum perforatum</i>	C	B	Yes. Three plants located in staging area 1; small infestations (typically less than 30 plants) located on road shoulder on Segments 3, 4, 10, 11, 13, 14, and Alt 3:6.
Perennial pepperweed	<i>Lepidium latifolium</i>	B	A	Yes. Identified on Alt 3:21 near Kirkwood Creek crossing in Kirkwood. Previously identified at 3 locations along south side of Hwy 88 outside of project area but near Segments 5 and 10.
White sweet clover	<i>Melilotus alba</i>	--	B	Yes. Located in staging area 1, and in multiple occurrences within gravel shoulder along Hwy 88 in Segments Alt 3:9, 15, 16, Alt 3:17 and Alt 3: 18. Also common on Alt 3:21 (Kirkwood Meadow Dr.) and Segment 22 (East Meadow Dr.) in Kirkwood.
Yellow sweet clover	<i>Melilotus officinalis</i>	--	B	Yes. Found within gravel shoulder along Hwy 88 in Segments 20 and 21, and common along Kirkwood Meadow Dr. (Alt 3:21) and East Meadow Dr. in Kirkwood. Several scattered plants in and surrounding staging area 6.
Russian thistle	<i>Salsola tragus</i>	C	B	No. Previously identified along south side of Hwy 88, across from Alt 3:8 and on Hwy 88 near Caples Lake.
Woolly mullein	<i>Verbascum thapsus</i>	--	B	Yes. Three occurrences on Segment 1, located east of the line in openings created by the Power fire. Located in gravel road shoulder on Segment 3, Alt 3:13, 21, Alt 3:21, and 22.

¹ California Department of Food and Agriculture (CDFA)

List A: Eradication or containment is required at a state or county level

List B: Eradication or containment is at the discretion of the county agricultural commissioner

List C: Eradication or containment required only when found in a nursery or at the discretion of the county agricultural commissioner.

² Eldorado National Forest weed lists:

List A: Highly invasive weed species known or suspected to occur on the Eldorado National Forest

List B: Exotic or noxious weed species known or suspected to occur on the Eldorado National Forest

The introduction and spread of noxious and invasive weeds are frequently tied to land disturbances and increased seed or propagules transport associated with human activities. The occurrence and

presence of noxious weed species is greatest within the Highway 88 corridor and in the immediate area of the Old Alpine Highway than in other less disturbed or visited areas of the ENF. Weed survey records indicate the occurrence of invasive and noxious weeds are infrequent and uncommon in portions of the project area that are undisturbed and away from existing roadways.

From a regional perspective, it is important to note that the number and cover of weed species visibly increases as the elevation decreases as evidenced by the ENF and county noxious weed databases. This trend is also evident within the elevation range of the project area. These observations are relevant to this project because the primary site access would be along Highway 88 from the lower elevations to the west.

Within the project area, the Forest Service monitors and treats noxious weed infestations on ENF lands. In addition, the El Dorado, Amador, and Alpine Counties have designated weed management areas to coordinate efforts and expertise against common invasive and noxious weed species. The Weed Management Areas operate under the direction of each County's Agricultural Commissioner's Office.

Regulatory Setting

Federal Regulations

Federal Noxious Weed Act of 1974 (7 USC 2801)

The Federal Noxious Weed Act of 1974 (7 USC 2801) requires federal agencies to cooperate with state and local agencies in the application and enforcement of laws and regulations pertaining to the management and control of noxious weeds and directed the Secretary of Agriculture to define noxious weeds species and designate weed species that require a permit from the USDA Plant Protection and Quarantine prior to their international import or interstate transport. A current listing of this federal designation is found at: http://www.cdfa.ca.gov/phpps/ipc/weedinfo/winfo_list-fednoxweeds.htm.

Executive Order 13112

Noxious weeds are addressed further by Executive Order 13112, which directs federal agencies to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impacts that invasive species can cause. The Executive Order specifies that federal agencies shall not authorize, fund, or carry out actions likely to cause or promote the introduction or spread of invasive species.

Forest Service Manual (FSM) 2008 and 2081 (USDA FS, 1995)

Agency-wide policy directives guiding how the Forest Service manages and controls noxious weeds are found in Forest Service Manual (FSM) 2008 and 2081 (USDA FS, 1995). FSM 2080 defines noxious weeds as those plant species designated by federal or state law and generally possess one or

more of the following characteristics: aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, and generally non-native. The agency manual further defines undesirable plants as species classified as undesirable, harmful, exotic, injurious, or poisonous, pursuant to state or federal laws, including those designated by the Secretaries of Agriculture or Interior.

FSM 2081 establishes Forest Service policies relating to the management of noxious weeds. This agency direction provides a number of provisions that relate to the project, including:

- When a ground disturbing action or activity is proposed, determine the risk of introducing or spreading noxious weeds associated with the proposed action. For projects having moderate to high risk of introducing or spreading noxious weeds, the project decision document must identify the noxious weed control measures that must be undertaken during project implementation.
- Determine the factors that favor the establishment and spread of noxious weeds and design management practices or prescriptions to reduce the risk of infestation or spread of noxious weeds.
- Priorities for noxious weed control include: 1) prevent the introduction of new invaders; 2) conduct early treatment of new infestations; and 3) contain and control established infestations.

Noxious weed species of concern on the ENF are identified and updated on an ongoing basis as approved by the Forest Supervisor (Brown 2010, personal communication). The current ENF weed listing, dated April 7, 2010, identifies 50 plant species as either highly invasive or noxious. This current ENF weed listing contains 27 List A species of highly invasive weed species known or suspected to occur on the ENF and 23 List B species that represent either exotic or noxious weeds that are not considered to be as aggressive as List A species or are widespread throughout the Forest. Both List A and B weed species were considered in the 2010 weed inventory conducted across the expanse of the project site and in the noxious weed risk assessment (RCI, 2010).

State Regulations

California Food and Agriculture Code

The California Food and Agriculture Code Section 403 designates the California Department of Food and Agriculture as the lead state agency in preventing the introduction and spread of injurious insects or animal pests, plant diseases, and noxious weeds. Food and Agriculture Code Section 7271 designates the Department of Food and Agriculture as the lead department in noxious weed management responsible for implementing state laws concerning noxious weeds. Representing a statewide program, noxious weed management laws and regulations are enforced locally in cooperation with the County Agricultural Commissioner (California Department of Food and Agriculture, 2010b).

Under state law, noxious weeds include any species of plant that is, or is liable to be, troublesome, aggressive, intrusive, detrimental, or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate, which the director, by regulation, designates to be a noxious weed (FAC Section 5004). The current designation of noxious weeds in California can be found at California Administrative Code, Title 3, Section 4500 or at www.cdfa.ca.gov/phpps/ipc/weedinfo/winfo_list-pestrating.htm. As of October 5, 2010, there were approximately 175 weed species designated as noxious by the CDFA.

By regulation, all weeds placed on California's noxious weed list are rated and prioritized into the following categories based on their distribution and severity of threat:

- A – Eradication or containment is required at the state or county level.
- B – Eradication or containment is at the discretion of the county agricultural commissioner.
- C – Eradication or containment required only when found in a nursery or at the discretion of the county agricultural commissioner.
- Q – Temporary "A" action required pending determination of a permanent rating.

California Department of Food and Agriculture or the County Agricultural Commissioner can issue a notification to the owner of premises infested by noxious weed species and require removal of the infestation. If the infestation is not removed within a period specified in the notice, the Department of Food and Agriculture or the County Agricultural Commissioner may eradicate, control, or destroy the infestation (FAC 5403). In areas where Department of Food and Agriculture has posed an eradication program, they may summarily destroy any targeted pest or infestation (FAC 5762-5763).

Local Regulations

County Agricultural Commissioners, jointly appointed to their positions by the County Board of Supervisors and California Department of Food and Agriculture, enforce state regulations and perform the bulk of regulatory weed eradication and control in California (CDFA, 2005). Both Amador and El Dorado Counties have active County Agricultural Commissioners offices and weed management programs. The El Dorado County Agricultural Commissioner also fulfills these responsibilities for Alpine County under an agreement with Alpine County (Jensen 2010, personal communication).

Amador County

Amador County Code 7.28 addresses weeds and shrubs. This chapter of the county ordinances prohibits a person from allowing the growing, dissemination, or sowing Scotch or Canada thistle seed,

and establishes abatement procedures for Scotch, Spanish, and French broom on lands located in Amador County.

El Dorado County

El Dorado County Code 6.08-6.16 specifies procedures for weed abatements conducted in the county and authorizes the County Agricultural Commissioner to formulate rules, regulations and policies to conduct weed abatements.

Alpine County

Alpine County does not currently have adopted ordinances or General Plan requirements relating to the management of noxious weeds. However, noxious weeds at the county level are managed for compliance with state laws and regulations as administered and enforced by the El Dorado County Agricultural Commissioner (Jensen 2010, personal communication).

Kirkwood Specific Plan

The Kirkwood Specific Plan includes a Noxious Weed Management Plan for Kirkwood Mountain Resort (Cirrus Ecologic Solutions, 2002). The plan outlines a strategy and specific steps to manage noxious weeds on the private lands located within Kirkwood. The plan uses the ENF noxious weed list as a target list of weeds that would be most likely to occur in the Kirkwood Area, and the basic strategy upon which the plan is based parallels the California Department of Food and Agriculture's Noxious Weed Prevention and Control Program (California Department of Food and Agriculture, 2010). The four main points of the plan are: 1) prevent weeds from being established; 2) if a weed does become established in the Kirkwood area, identify it while the population is still small; 3) when a weed population is found, eradicate it; and 4) educate the public, including Kirkwood employees, residents, and guests, as to the importance of keeping weeds out of the area.

Significance Criteria

NEPA Impact Criteria

The NEPA analysis determines whether the project would have an effect to the existing environment through the introduction or spread of noxious weeds and provides a comparison of effects by alternative.

For the purposes of this analysis, the proposed project would be considered to have a significant effect if it were determined through completion of a project specific noxious weed risk assessment that it would represent a ***greater than a moderate level of risk*** in the introduction or spread of noxious weed species.

CEQA Impact Significance Criteria

Appendix G of the state CEQA Guidelines do not provide criteria for assessing impacts from the introduction or spread of noxious weed species. The California Department of Food and Agriculture or the County Agricultural Commissioners' offices for Amador, El Dorado, and Alpine Counties do not have identified thresholds of significance for noxious weeds.

Effects Analysis

This section includes a joint NEPA/CEQA analysis of impacts from the introduction and establishment of noxious weeds by the proposed project and evaluates the impacts utilizing the NEPA criteria. At the conclusion of the discussion is a NEPA impact summary statement.

Alternative 1 (No Action / No Project)

Indirect Effects

Under the No Action / No Project Alternative, no power line or supporting structures would be constructed to accomplish the purpose and need. The No Action / No Project Alternative would have no effect on the spread or eradication of noxious weed species. Current weed monitoring and abatement programs as established by the counties and Kirkwood would persist.

Cumulative Effects

Under the No Action / No Project Alternative, the existing factors affecting the spread of noxious weed species would continue; however, there would be no additive effect from project implementation, and therefore there would be no cumulative effects from Alternative 1.

Effects Common to Alternative 2 (Proposed Action / Proposed Project), Alternative 3 (Expanded Hwy 88), and Alternative 4 (KM Green Substation Location at Cole Creek)

Indirect Effects

Establishment of noxious and invasive weeds within the project area would represent an *indirect* effect of the Kirkwood Meadows Power Line Reliability Project. Alternatives 2, 3, and 4 would have similar effects on the establishment of noxious and invasive weeds within the project area because the acres of new ground disturbance would be similar. Accordingly, the environmental effects from the project and action alternatives are discussed together.

Vegetation communities are more susceptible to infestations of invasive or noxious weed species following soil disturbances or removal of existing vegetation. The proposed project action alternatives minimize ground disturbance and vegetation removal through utilization of existing roadways; however, construction activities would temporarily remove approximately 52 acres of vegetation for equipment access along the entire power line, and new soil disturbance would occur on approximately

19 acres along Segments 1 and 2, construction of the KM Green substation, and along portions of Segments 5, 6, 9 and 19 common to both Alternatives 2 and 3. (A detailed description of new soil disturbance areas and impacts is located within the Soils Resources section of Chapter 3). Along Segment 1, located on ENF, three small occurrences of wooly mullein were identified. Along Segments 5 and 6, small infestations of cheatgrass were present in the shoulder of Highway 88, near the proposed alignment. Both wooly mullein and cheatgrass are listed as ENF List B species and are not listed by the CDF. No state or ENF listed noxious or invasive weeds were identified along Segments 9 and 19. Weed occurrences identified along the project corridor are illustrated in Figure 35.

The project proposes to bore the power line under Highway 88 at the northeast intersection of the highway and Bear River Road. Adjacent to this project section is a documented occurrence of yellow star thistle (ENF List A; CDFA list C) located on ENF land. Prior to project implementation, this occurrence would be resurveyed and flagged, and all construction equipment excluded from the area. KMPUD would coordinate with the ENF botanist prior to construction to determine if any additional pre-construction treatment would be necessary to avoid and minimize the spread of this species from construction activities. Based on these preventative measures, the risk of spread of yellow star thistle would be low. However, should it occur, post construction monitoring would identify and track the spread of this species along the power line corridor, and post construction treatment, as approved by the ENF botanist, would be implemented as necessary to eradicate and prevent any further spread. Treatment of yellow star thistle on ENF land could include hand pulling or mowing.

Vegetation removal and soil disturbance during power line construction creates favorable conditions for the establishment of undesirable weed species. Once established, invasive and noxious weeds negatively affect native species by competing for resources such as water and light. In addition, many noxious weed species produce and release chemical compounds that inhibit the growth of other plants. These effects can change the community composition through elimination or reduction of native plant species or by changing the vegetation structure. The changes in community composition or vegetation structure affect fire regimes and can also negatively affect habitat for wildlife. Use of existing roadways along the project corridor to minimize vegetation removal and soil disturbance would reduce conditions that favor undesirable weed species.

During construction, movement of crews and equipment along the proposed access roads or within cleared vegetation corridors could provide opportunities for weed seed transport into non-infested areas. While the Alternative 2 (Proposed Action / Proposed Project) and Alternative 3 (Expanded Hwy 88) segments include similar routes and length of disturbance, Alternative 3 would be located within Highway 88 to a greater extent than Alternative 2, and therefore has greater potential to encounter established weed populations. Indirect effects could include the establishment or spread of invasive or noxious plants along the power line through maintenance activities, or by providing a corridor for the establishment and spread of invasive or noxious weeds to adjoining lands. Flagging of

the existing known noxious weed occurrences and avoidance and or treatment of the occurrences would reduce the potential spread of noxious weeds from movement of construction crews and equipment. When a known occurrence cannot be avoided, equipment would be required to be washed and inspected prior to moving to a non-infested area.

Post-construction revegetation, called for in the project design criteria, would reduce the potential establishment and spread of noxious weed species by stabilizing soil disturbances and filling vacant niches with native plant species capable of competing against establishing weed species.

Post-construction treatment of invasive and noxious weed can also negatively impact other plants, habitats, and soils. Because noxious weeds can be difficult to control, weed control efforts such as hand pulling, digging, or spraying, may continue for multiple years post-construction activities. These efforts may cause continued disturbance and trampling of native species.

In accordance with Forest Service procedures, a Noxious Weed Risk Assessment was conducted to assess the risks associated with the proposed project and Alternative 3 for introducing or spreading designated noxious weeds species along the entire proposed construction corridor (RCI, 2010). The noxious weed risk assessment is found in the project file. In consideration of the design criteria utilized in the action alternatives, this completed assessment concluded that the action alternatives posed a *low risk* for introducing new noxious weed species and a *moderate risk* for spreading existing noxious weed infestations located in the general proximity of the project area. The largest threat is the movement of construction equipment and personnel across the project area spreading seeds and propagules from existing noxious weed populations located in the immediate vicinity into this project area. This moderate risk is reduced by: 1) flagging and avoiding known occurrences of noxious weed species along the project corridor; 2) washing and inspection of equipment prior to the start of construction activities or when moving from an infested area to a non-infested area; and 3) post-construction monitoring and reporting over a three-year period following project construction that would allow for early detection and treatment of new weed occurrences.

Cumulative Effects

Three Forest Service fuel reduction projects were identified within the project area with potential to generate cumulative effects: 1) View 88 Project, 2) Lost Horse Project, and 3) Oski Bear. Pursuant to NEPA, potential impacts from these projects would be analyzed by the ENF consistent with the LRMP (USDA FS, 2004). Impacts from noxious and invasive weeds have been minimized on past projects on land managed by the Forest Service through implementation of mitigation measures such as pre-construction surveys for weed species, flagging and abatement. Therefore, the potential for adverse cumulative effects from the proposed activities, past activities, and reasonably foreseeable actions would be similar to the project; a *low risk* for introducing new noxious weed species and a *moderate*

risk for spreading existing noxious weed infestations located in the general proximity of the project area.

NEPA and CEQA Effects Summary

The project design features avoid and minimize construction effects relating to the introduction or spread of noxious weeds within the project area. The alternatives ***do not pose a greater than moderate level of risk*** to the spread or introduction of noxious and invasive weeds. Effects from the introduction or spread of noxious weeds within the project area would be ***less than significant***.