

FINAL
(PLENARY APPROVED)

Klamath Hydroelectric Project Study Plans
(FERC Project No. 2082)

2.7 Noxious Weed Inventory

PacifiCorp
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2.7 NOXIOUS WEED INVENTORY

2.7.1 Description and Purpose

The purpose of the noxious weed and non-native invasive plant species inventory is to determine the occurrence of noxious weeds in the vicinity of the Klamath Hydroelectric Project (Project). This study will describe the potential for non-native species from the study area to spread to National Forest/U.S. Bureau of Land Management (BLM) lands and waters, and also will review potential measures for suppressing exotic and invasive weeds on PacifiCorp-owned lands that may be used in a vegetation management plan.

2.7.2 Objectives

The objectives of this study are to:

- Map areas where noxious weeds and non-native plant species occur in the study area.
- Provide data that will be useful for land management agencies in and adjacent to the study area (BLM, U.S. Forest Service [USFS], and states of Oregon and California) in addressing the problem of non-native plant species management and allow the agencies to adhere to applicable management plans to the extent that the Project affects them.
- Coordinate this study with the riparian and wetland characterization study to identify Project operation effects on the maintenance of non-native plant species along reservoir shorelines and riverine sections.
- Collect data that will be used in development of protection, mitigation, and enhancement (PME) measures to enhance botanical and wildlife resources in the study area.

This study will help to answer the following key questions:

- Where are the noxious weeds in the study area?
- Are the noxious weed and non-native invasive plants supported by Project operations?
- Can PacifiCorp alter Project operations or implement other actions that would help to eradicate, where possible, and control the spread of these plant species?

2.7.3 Relicensing Relevance and Use in Decisionmaking

California, Oregon, and BLM have regulations that address the spread and control of noxious weeds. Agency objectives are to contain or reduce noxious weed infestations on their land and to avoid spreading weeds from other areas. Management objectives for control of noxious weeds in the study area will be addressed in PacifiCorp land management plans.

2.7.4 Methods and Geographic Scope

This study will focus on areas directly affected by Project operations. Within the overall study area from the vegetation cover type mapping (Study Plan 2.1), fieldwork will emphasize areas

around all Project facilities, roads, transmission lines, and reservoirs, riverine shorelines, and riparian areas from the Link River to the mouth of the Shasta River.

To ensure that noxious weed and non-native invasive plant populations are adequately described for lands surrounding the Project, PacifiCorp will integrate data collected during field surveys with existing data obtained from resource agencies to generate maps of noxious weeds and non-native invasive plant populations in the entire vegetation mapping study area. This area includes a 0.25-mile-wide buffer around the Project structures, reservoirs, and affected river reaches; all PacifiCorp lands; and the canyon between J.C. Boyle dam and Copco Lake.

Before conducting the field surveys, botanists will familiarize themselves with the species potentially occurring in the area. A target list of noxious weed species potentially occurring in the study area has been developed through consultation with the resource agencies and other sources of information and is presented in Table 2.7-1. The list of target species includes information obtained from the following sources:

- Siskiyou County, California, and Klamath County, Oregon, lists of noxious weeds
- Oregon’s Noxious Weed Policy and Classification System (Oregon Department of Agriculture, 2000) (http://www.oda.state.or.us/plant/weed_control/WeedPolicy2001.pdf)
- California Department of Food and Agriculture information (<http://pi.cdfa.ca.gov/weedinfo>)
- Consortium of Northeastern California Weed Groups (Siskiyou County)
- BLM and USFS data and consultation with agency botanists

Table 2.7-1. Noxious Weed and Non-Native Invasive Plant Species Potentially Occurring in the Klamath Study Area

SCIENTIFIC NAME	COMMON NAME
<i>Acroptilon repens</i>	Russian Knapweed
+ <i>Bromus tectorum</i>	Cheat Grass
<i>Cardaria draba</i>	Hoary Cress
<i>Carduus acanthoides</i>	Plumeless Thistle
<i>Carduus nutans</i>	Musk Thistle
<i>Carduus pynchnocephala</i>	Italian Thistle
<i>Cenchrus</i> spp.	Sandbur Grass
<i>Centaurea diffusa</i>	Diffuse Knapweed
<i>Centaurea maculosa</i>	Spotted Knapweed
+ <i>Centaurea solstitialis</i>	Yellow Starthistle
<i>Centaurea squarrosa</i>	Squarrose Knapweed
<i>Chorispora tenella</i>	Purple Mustard
<i>Chondrilla juncea</i>	Rush Skeletonweed
<i>Cirsium arvense</i>	Canada Thistle
<i>Cirsium ochrocentrum</i>	Yellowspine Thistle

Table 2.7-1. Noxious Weed and Non-Native Invasive Plant Species Potentially Occurring in the Klamath Study Area

SCIENTIFIC NAME	COMMON NAME
+ <i>Cirsium vulgare</i>	Bull Thistle
<i>Crupina vulgaris</i>	Common Crupina or Bearded Creeper
<i>Cytisus scoparius</i>	Scot's broom
<i>Euphorbia esula</i>	Leafy Spurge
<i>Gypsophila paniculata</i>	Baby's Breath
<i>Halogeton glomeratus</i>	Halogeton
<i>Hypericum perforatum</i>	Klamath Weed or St. John's Wort
<i>Isatis tinctoria</i>	Dyer's Woad or Marlahan Mustard
<i>Lepidium latifolium</i>	Perennial Pepperweed or Tall Whitetop
+ <i>Linaria dalmatica</i>	Dalmatian Toadflax
<i>Lythrum salicaria</i>	Purple Loosestrife
<i>Onopordum acanthium</i>	Scotch Thistle
<i>Onopordum tauricum</i>	Taurium thistle
<i>Physalis virginiana</i> var. <i>subglabrata</i>	Smooth Ground Cherry
<i>Polygonum cuspidatum</i>	Japanese Knotweed
<i>Polygonum sachalinense</i>	Giant Knotweed
<i>Salsola</i> sp	Russian Thistle
<i>Salvia aethiopsis</i>	Mediterranean Sage
<i>Senecio jacobea</i>	Tansy Ragwort
<i>Sonchus arvensis</i>	Perennial Sow Thistle
<i>Sorghum halpense</i>	Johnson Grass
+ <i>Taeniatherum caput-medusae</i>	Medusahead
<i>Tribulus terrestris</i>	Puncture Vine
<i>Xantium spinosum</i>	Spiny Cocklebur

Before fieldwork begins, PacifiCorp will coordinate with the resource agencies to confirm survey locations based on the preliminary cover type maps. Inventory efforts will be integrated with BLM and USFS to the extent possible. PacifiCorp will review database standards for BLM's noxious weed database and will maintain compatibility wherever possible.

The noxious weed field inventory will be completed in conjunction with the threatened, endangered, and sensitive (TES) species plant surveys (May-July); vegetation cover type verification (April-July); and the intensive riparian/wetland vegetation characterization surveys (August-September); and supplemented by incidental observations. Maps or the global positioning system (GPS) will be used to document locations of noxious weed populations as well as the areas that were surveyed. The distribution of some wide-spread common species like cheat grass may be described rather than mapped.

The mapped data and information on plant densities will be evaluated in relationship to Project reservoir water level management, river hydrology, recreation use patterns, and maintenance activities to determine whether Project operations may be affecting the distribution of the target species.

2.7.5 Relationship to Regulatory Requirements and Plans

The noxious weed and non-native plant species inventory will help meet regulations for controlling the spread of these species. The state Noxious Weed Control Board regulations will be used to help prioritize PME measure development.

2.7.6 Products, Maps, and Reports

A geographic information system (GIS) coverage and database will be produced that identifies noxious weed populations by species and population size/density. Status will be reported at Terrestrial Work Group meetings or conference calls to summarize progress and initial results from this study. Summary information will be incorporated into the Final Technical Report. PME measures will be included in the draft license application.

2.7.7 Schedule

The timeline and milestones for this study are as follows:

Conduct literature review and coordination	Fall 2001 to Winter 2001-2002
Perform field surveys	Spring-Summer 2002
Develop assessment	Fall 2002
Develop Final Technical Report	Winter 2002-2003

2.7.8 Additional Considerations

Two previous draft versions of this study plan have been submitted for stakeholder review and comment. Meetings with stakeholders in December 2001, January 2002, and April 2002, were also conducted to discuss various elements of this study plan. A number of comments were received from stakeholders that included suggested modifications to the scope of the study plan, or that requested additional studies or study tasks. These comments have been reviewed and, in most instances, the study plan revised to address requested modifications and additional study tasks. Stakeholder comments and requests have been resolved.

PacifiCorp will continue to consult with agencies as information becomes available. In particular, PacifiCorp will alert land management agencies and the County Weed Board of Siskiyou and Klamath Counties of any isolated weed populations as soon as the information is available.

2.7.9 References

Oregon Department of Agriculture Noxious Weed Control Program. 2001. *Noxious Weed Policy and Classification System*.