Supplemental Guidance
for
Pre-Disturbance Surveys
Under the Northwest Forest Plan
Survey and Manage Standard and Guidelines

Cladonia norvegica

USDA Forest Service Regions 5 and 6
USDI Bureau of Land Management, Oregon and California

September 2012

SURVEY GUIDANCE

In the 2011 Survey and Manage Settlement Agreement list of species (IM OR-2011-063, July 21, 2011), *Cladonia norvegica* was placed into Category C, a category that requires pre-disturbance surveys prior to habitat-disturbing activities. Previously *Cladonia norvegica* was not on the Survey and Manage list (2003 Annual Species Review) or was in Category B in the 2001 Survey and Manage Record of Decision (2001 ROD) list of species.

A transition period for which species list to use is identified in the settlement agreement, with either the 2001 ROD list or the 2011 Settlement Agreement list used for Decisions made between December 17, 2009 and September 30, 2012. For Decisions made after September 30, 2012 the 2011 Settlement Agreement list of species is required to be used. For projects that utilize the 2011 Settlement Agreement list of species, pre-disturbance surveys for this species will need to be completed.

Pre-disturbance surveys for this species are required when all of the following conditions are met:

1. Project lies within the known or suspected range of the species.
2. Project lies within or could affect suitable habitat for the species.
3. Project has the potential to cause a significant negative effect on the species habitat or the persistence of the species at the site.

Review the exemptions in Northwest Ecosystem Alliance v. Rey, No. 04-844-MJP (2006 Pechman exemptions) and Conservation Northwest v. Sherman, No. 08-CV-1067-JCC (2011 Settlement Agreement) to determine if the project may be exempt from conducting pre-disturbance surveys.

Protocols for pre-disturbance surveys should follow the survey methods previously developed for lichen species (Survey Protocols for Survey & Manage Category A & C Lichens, IM OR-2003-078, June 9, 2003). Vouchering for this species follows direction transmitted from the Agencies for lichens (for Region 6/BLM, follow IM-2012-010).

Survey (and site) data must be entered into GeoBOB for BLM and NRIS TES Plants using field forms developed for each respective application.

SPECIES-SPECIFIC INFORMATION TO ASSIST IN PRE-DISTURBANCE SURVEYS

Species Name, taxonomic group
Cladonia norvegica Tønsb. & Holien; Lichen

Technical Description
Primary **thallus** of small leaf-like flaps (squamules) attached at their base to the substrate, with a green cortex on the upper surface and white or pale beneath, without a cortex; squamules 2 - 4 mm wide, deeply dissected, esorediate or with soredia beneath the tips. Hollow stalks (**podetia)** 1.5 - 3 cm tall, 0.5 - 2 mm wide, with thin cortex only at the base and occasionally just below the apothecia; podetia covered with fine soredia that are sparse in places, revealing the whitish hyphae of the medulla beneath; squamules rarely on the podetia;podetia tapering or cylindrical, narrow or thick, often with pycnidia at the tip instead of apothecia, rarely branched or with small cups. **Apothecia**, when present, resembling a pale brown bumpy head (capitate), wider than the podetium (see Peterson (no date) photograph referenced below). Photosynthetic partner (photosymbiont) a green alga (*Trebouxia*).

Chemistry: P-, K-, UV+ bluish white

Distinctive characters: P-, pale brown apothecia; podetia that are sorediate with only a small amount of cortex near the base. **Similar species:** Species in the genus *Cladonia* are difficult to identify because each can be so variable and because so many species exist in the Pacific Northwest. Thalli of several species are often found growing intermixed, so when working on a specimen, care must be taken to separate out podetia that look the same. Then do a P test: *Cladonia coniocraea* and *C. ochrochlora* often occur with *C. norvegica* (Tønsberg & Goward 1992) and look similar but both are P+. *Cladonia ochroclora* has a thick cortex at base of podetium. The apothecia and pycnidia of *C. coniocraea* and *C. ochrochlora* are dark brown, but fertile specimens tend to be rare in both species (Tønsberg & Goward 1992). Often there is a pycnidium at the tip of the podetium, colored the same as an apothecium if one were present. The squamules of *C. coniocraea* are usually larger and less finely incised than *C. norvegica* but this character is so variable that measurements are of little help. **Other descriptions and illustrations:** Brodo et al. (2001); Goward et al. (1994); McCune & Geiser (2009); Peterson (no date); Tønsberg & Goward (1992); Tønsberg & Holien (1984).

Life History
In *Cladonia*, the primary thallus of squamules appears first, then podetia develop as the thallus matures. One "individual" thallus may consist of many squamules and many podetia. Distribution is by fragments, squamules, soredia, asexual spores from pycnidia (conidia) or spores.

Range
Interruptedly circumpolar and bipolar. Northwestern and northeastern North America, Europe, Japan, Russia, and southernmost South America. In the Pacific Northwest, known from Alaska, British Columbia, Washington, and Oregon.

National Forests: Documented on Deschutes, Gifford Pinchot, Mt. Baker-Snoqualmie, Mt. Hood, Ochoco, Olympic, Siuslaw, Umpqua, Okanogan-Wenatchee, and Willamette NFs. Suspected on the Columbia River Gorge National Scenic Area (WA & OR) and the Rogue-River/Siskiyou NF.

BLM Districts: Documented on Coos Bay, Eugene, Roseburg, and Salem Districts. Suspected on Prineville BLM District.

Population sizes in the Pacific Northwest are not known. *Cladonia norvegica* is possibly common in parts of northwestern Europe. At least 41 occurrences are currently known in the Pacific Northwest. The most northerly locality known in North America is 60º 47' N (Tønsberg & Holien 1984).

Habitat

On decaying bark or wood at the base of conifer trees and on decaying logs in humid forests, from sea level to 1300m elevation (Tønsberg & Goward 1992). Forest types are *Pseudotsuga menziesii*, *Picea sitchensis*, and *Tsuga heterophylla*.

Information in this supplemental guidance compiled from the Cladonia norvegica Species Fact Sheet (Stone et al., 2010), available on the Interagency Sensitive and Special Status Species website: http://www.fs.fed.us/r6/sfpnw/issssp/species-index/flora-lichens.shtml

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