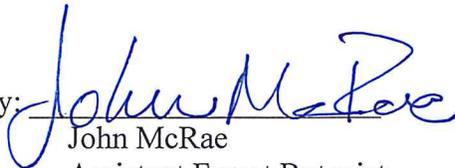


BIOLOGICAL ASSESSMENT  
FOR ARABIS MCDONALDIANA

Smith River National Recreation Area  
Restoration and Motorized Travel Management Project FEIS  
Six Rivers National Forest  
September 27, 2016

Prepared by:



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Date:

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## **I. INTRODUCTION**

The purpose of this biological assessment is to review actions proposed in the Smith River National Recreation Area Restoration and Motorized Travel Management Project. This document is prepared in accordance with the legal requirements set forth under Section 7 of the Endangered Species Act [19 U.S.C. 1536], and follows the standards established in the Forest Service Manual direction (FSM 2672.42) (USDA 1991).

The Endangered Species Act requires that federal agencies seek information from the U. S. Fish and Wildlife Service to determine whether any plant species which is listed or proposed to be listed may be present in the area of a federal action. A list of federally listed species to review for the analysis was compiled using the Arcata U.S. Fish and Wildlife Office on-line IPaC (Information for Planning and Conservation) search page (USDI 2016). McDonald's rockcress (*Arabis mcdonaliana*) and the western lily are the only listed plant species on the list. The western lily is a coastal species. It is not known from the project area and it is highly unlikely that it occurs therein.

This assessment analyzes the direct and indirect effects of actions proposed in the Smith River National Recreation Area Restoration and Motorized Travel Management Project on the federally listed endangered McDonald's rockcress. McDonald's rockcress nomenclature follows *The Jepson Manual Vascular Plants of California*, Second Edition (Baldwin, et al. 2012).

## **II. CONSULTATION TO DATE**

Consultation under Section 7 of the Endangered Species Act was not required for the proposed action due to the no effects determination.

## **III. CURRENT MANAGEMENT DIRECTION**

Current management direction can be found in the Six Rivers National Forest Land and Resource Management Plan (LRMP) and the Forest-wide Reference Document (March, 2004).

Programmatic management direction for Six Rivers National Forest is provided by the Land and Resource Management Plan, Six Rivers National Forest (USDA 1995). The LRMP was developed utilizing the guidelines provided by the Forest and Rangeland Renewable Resource Planning Act of 1974, as amended by the National Forest Management Act of 1976 and the National Environmental Policy Act of 1976. Standards and Guidelines in the LRMP state that Federally listed threatened or endangered plants and their habitats will be managed to achieve recovery plan objectives (FSM 2670.21 and 2672.31). If an approved plan is not available, as is the case with the Del Norte County occurrences of McDonald's rockcress, all known populations and their occupied habitat will be protected from negative impacts associated with forest management activities.

## IV. DESCRIPTION OF PROPOSED ACTION

The preferred alternative, Alternative 6, of the Smith River National Recreation Area Restoration and Motorized Travel Management (SRNRARMTM) project on Six Rivers National Forest proposes to:

- Add selected unauthorized access routes (UARs) as roads to the National Forest Transportation System (NFTS).
- Add selected UARs as motorized trails to the NFTS.
- Upgrade selected NFTS roads from closed (ML 1) to open (ML 2)..
- Downgrade select NFTS roads from open (ML 3) to mixed use (ML 2)
- Decommission selected NFTS roads to non system (closed)
- Convert selected NFTS roads to motorized trails
- Designate parking areas on 17N49
- Restore hydrological function on selected UARs
- Barricading UARs not added to the NFTS.

The area affected by the proposal includes Smith River National Recreation Area (SRNRA). These actions are needed to provide a diversity of motorized recreation opportunities (4X4 vehicles, motorcycles, ATVs, SUVs, passenger vehicles, etc.) while protecting natural resources.

## V. Existing Environment

### A. Species Account

**McDonald's rockcress** (*Arabis mcdonaldiana*)

Status: Federal Endangered, State Endangered

### Distribution and Abundance

McDonald's rockcress occurs in northern California and southwestern Oregon (Hickman 1993). It is known from 7 element occurrences<sup>1</sup> in Oregon (personal communication, Vrillakas, 2005) in Curry County on the Siskiyou National Forest. In California it is known from three disjunct populations, one in Mendocino County, another in Del Norte County, and one site on Preston's Peak in Siskiyou County. Due to taxonomic clarification needed at the time, the recovery plan for this species only included the Mendocino population (USDI 1984).

McDonald's rockcress has been assigned a global conservation status rank of G3 (vulnerable) at moderate risk of extinction or elimination due to a restricted range,

relatively few populations (often 80 or fewer), recent and widespread declines, or other factors. Federal land management agencies (especially the Forest Service and BLM) have placed increasing emphasis on Nature Serve ranks to prioritize their conservation and planning efforts.

The population size for McDonald’s rockcress is difficult to estimate because individual plants branch below ground displaying rosettes or ramets<sup>1</sup> on the surface which do not necessarily represent individuals. Table 1 below displays ramet counts for Del Norte County. This estimate includes historic data and may differ from actual counts if contemporary data were available. Population size in Oregon is estimated at 300 to 400 individuals (personal communication, Vrilakas 2006). A Recovery Plan, written for the Mendocino population (USDI 1984) estimates the population size in Mendocino between 1,000 and 5,000 individuals. Therefore, in the context of McDonald’s rockcress across its range, the Del Norte population represents approximately 45% of the population total. All known occurrences on Six Rivers National Forest are in Smith River National Recreation Area. The populations are spread out among 20 element occurrences. Approximately 45% of the occurrences in Del Norte County occur within the North Fork Smith Botanical Area where the primary goal is to manage for the full complement of species and plant communities as well as the natural processes that support these elements (USDA 1998). UARs within the North Fork Botanical Area are not being proposed for addition to the NFTS. The occurrences are isolated due to the species’ preference for a naturally fragmented habitat type (ultramafic barrens).

Table 1 – McDonald’s rockcress Occurrences in Del Norte County, CA.

Occurrence	Occurrence Number	Ramet Count	In Bot Area	other
	Total Number of Ramets	8988	4045	4943
	Percent of Total	100%	45%	55%

## B. Habitat Status

McDonald’s rockcress (species code = ARMA) is a rare herbaceous perennial forb that is considered to be a strict serpentine endemic (Safford 2005), only found on serpentine substrate. It is typically found in very open settings on serpentine commonly referred to as serpentine barrens. McDonald’s rockcress occurs less frequently in areas with well-developed shrub lands or Jeffrey pine woodlands with a dense herbaceous layer (Newton 1987). McDonald’s rockcress is restricted to rock crevices and bare slopes of steep (40-90%), semi-stable soils derived from ultramafic parent material. This parent material imparted a neutral surface and sub-surface pH of 6.9 (Jimerson et al. 1995). Soils are well-drained, shallow (100%), loams, gravelly loams and very gravelly sandy loams, with

<sup>1</sup> Ramets represent the number of vegetative units or stems produced by a plant. For consistency in collecting data, ramets are often counted, rather than attempting to guess the number of individuals, or dig up plants. A rough estimate of the number of ramets produced by a plant can be inferred from the number of stems occurring in a cluster. With McDonald’s rock cress it is not unusual to observe clusters of stems exceeding 5, hence an estimate of the number of plants would be one third the ramet count.

very low water holding capacity (Jimerson et al. 1995). Soils developed from such bedrock are relatively enriched in various toxic metals, including nickel, magnesium, barium, and chromium; they are also lacking in important nutrients. Recent research has shown a significant correlation between heavy metal concentrations and McDonald's rockcress distribution (Smith and Diggles 1999). Sites with low McDonald's rockcress plant densities have high nickel, chromium, and barium concentrations, suggesting that concentrations of these metals might play a role in inhibiting growth of McDonald's rockcress.

At sites where McDonald's rockcress is known to occur aspect varies widely, and elevation varies between 1200-5200 feet (366-1585 m). Populations often occur on steep slopes, but a few are located in Jeffrey pine (*Pinus jeffreyi*) grasslands on relatively flat topography. Vegetation cover is very sparse, with overstory cover typically less than 5%. Common associates include Jeffrey pine, incense cedar (*Libocedrus decurrens*), knobcone pine (*Pinus attenuata*), huckleberry oak (*Quercus vaccinifolia*), Siskiyou mat (*Ceanothus pumilus*), running juniper (*Juniperus communis*), pinemat manzanita (*Arctostaphylos nevadensis*), box-leaved silktassel (*Garrya buxifolia*), wedgeleaf violet (*Viola cuneata*), spreading phlox (*Phlox diffusa*), Waldo buckwheat (*Eriogonum pendulum*), death camas (*Zigadenus micranthus*), Howell's horkelia (*Horkelia sericata*), and Idaho fescue (*Festuca idahoensis*) (Imper 1983, Newton 1987, Jimerson et al. 1995).

### **Suitable Habitat Within Six Rivers National Forest**

Of the apparently suitable habitat within the Forest, much is not occupied. Even within barrens, McDonald's rockcress individuals are usually found in outcrops scattered throughout the barrens; therefore, the distribution of plants is considered "patchy". Where topography is not flat a majority of the plants are located along ridge faces, which are naturally fragmented. McDonald's rockcress and its habitat are known to occur in the project area where it occupies barrens and outcrops derived from ultramafic substrate.

### **Field Survey Results**

Field reconnaissance of the project area for McDonald's rockcress first took place in 2006 and were timed to coincide with blooming season. McDonald's rockcress flowers in May through June (Munz and Keck 1959). Fruiting occurs June through July (USDA 2001). After fruiting, above ground portion of plants shrivel and die back and the plants persist in a dormant state underground until revived by ground soaking rains. Additional field surveys were completed in each year between 2010 and 2013. An intuitive survey method was used to survey the project area for McDonald's rockcress. Habitat elements surveyed were serpentine barrens and rocky micro-sites in Jeffrey pine-dominated woodland intersected by routes affected by the proposed action which had a moderate<sup>2</sup> to

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<sup>2</sup> A moderate risk was assigned to those route segments where no known locations of Federally list or Sensitive plant species were present but the potential for suitable habitat was either thought to exist, or access off road to proximal (100 feet) suitable habitat had the potential to not be prevented by natural barriers.

high<sup>3</sup> risk of impacting botany resources. These surveys, performed by Forest Service Botanists, were performed to determine if McDonald's rockcress was present. No plants of McDonald's rockcress were found within 100 feet of unauthorized access routes (UARs) proposed for addition to the National Forest Transportation System (NFTS) as either roads or motorized trails.

Surveys that were performed focused on non-system routes proposed for motorized use designation that intersected serpentine barrens. System roads proposed for keeping, upgrading or removing from the system were not surveyed as their highly altered, engineered surfaces are not considered suitable habitat and these actions will not affect McDonald's rockcress. Non-system routes that are not on suitable (serpentine) substrates or that are outside of the known range of the target species were not surveyed nor were surveys performed on non-system routes that would not be added to the system due to the lack of potential effects. McDonald's rockcress was not found to be present on UARs proposed to be added to the NFTS, hence this action has no affect.

## **VI. Effects of the Proposed Action**

McDonald's rockcress was not found to be present on or adjacent to (within 100 feet) routes surveyed. McDonald's rockcress was found growing on the travel way approximately 125 feet past where UAR 305.118A crosses Still Creek at Hole-in-the-Ground Mine. The UAR is proposed to be barricaded and end prior to reaching Still Creek. Rock fall and large boulders prevent motorized travel in the vicinity of the McDonald's rockcress occurrence. These boulders should not be used as part of the barricade at the end of 305.118A.

## **VII. DETERMINATION**

It is my determination that the Smith River National Recreation Area Restoration and Motorized Travel Management project will not affect McDonald's rockcress (*Arabis mcdonaldiana*).

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<sup>3</sup> A high risk was assigned to those route segments that passed through or where adjacent to sites occupied by endangered or sensitive plant species, or access off road to proximal known sites had the potential to not be prevented by natural barriers.

## LITERATURE CITED

- Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Paterson, T.J. Rosattii, and D.H. Wilken, editors. 2012. The Jepson manual: vascular plants of California, second edition. University of California Press, Berkeley, CA.
- Hickman, J. C. (editor) 1993. The Jepson Manual: Higher Plants of California. University of California Press, Berkeley.
- Imper, D. 1983. Report of the 1983 field inspection for McDonald's rockcress (*Arabis mcdonaldiana* ssp. *McDonald'siana*). Report on file. USDA Forest Service, Six Rivers National Forest, Eureka, CA. 18pp.
- Jimerson, T.M.; L. D. Hoover; E. A. McGee, [and others]. 1995. A Field Guide to Serpentine Plant Associations and Sensitive Plants in Northwest California. R5-ECOL-TP-006, USDA-FS, Pacific Southwest Region, San Francisco, CA. 338 p.
- Munz, P.A. and D.D. Keck 1959. A California flora. University of California Press, Berkeley, CA. 1681 p.
- NatureServe. 2002. Element Occurrence Data Standard, 6 February 2002. NatureServe, Arlington, Virginia. <http://whiteoak.natureserve.org/eodraft/index.htm>.
- Newton, G. 1987. A field search for *Arabis mcdonaldiana* on High Plateau Mountain, Del Norte County, California. Report on file. USDA Forest Service, Six Rivers National Forest, Eureka, CA. 13pp.
- Rollins, R. 1993. The Cruciferae of North America. Stanford University Press.
- Smith, C. and M. F. Diggles, 1999. Geochemical Investigation of Distribution of *Arabis mcdonaldiana* in the Josephine Ophiolite, Six Rivers National Forest, Del Norte County, California; U.S. Geological Survey Open-File Report 99-xxx (ULR:<http://wrgis.wr.wugs.gov/open-file/of99-xxx>).
- USDA, Forest Service, 1991. Forest Service Manual (FSM 2672.42).
- USDA, Forest Service. 1995. Six Rivers National Forest land and resource management plan (Six Rivers LRMP). Pacific Southwest Region, San Francisco, CA.
- USDA, Forest Service. 1998. Special Interest Area Management Strategy. United States Department of Agriculture, Forest Service. On file at the Six Rivers National Forest Supervisor's Office, Eureka, CA.
- USDA, Forest Service. 2001. Field Guide to the Sensitive Plants, Special Interest Plants, and Noxious Weeds of the Six Rivers National Forest California. On file at Six Rivers National Forest, Supervisor's Office, Eureka, CA.

USDA, Forest Service. 2004. Biological Assessment/Evaluation; Threatened, Endangered, Proposed, and Forest Service Sensitive Species. Forest-wide Reference Document. Klamath Province. Six Rivers National Forest. On file at Six Rivers National Forest, Supervisor's Office, Eureka, CA.

USDI, Fish and Wildlife Service. 2013. *Arabis mcdonaldiana* (McDonald's rockcress) 5-Year review: Summary and Evaluation. Arcata Fish and Wildlife Office, Arcata, CA.

Personal communication:

Vrilakas, S. 2005. Botanist/Data Manager, Oregon Natural Heritage Information Center, Oregon State University, Portland, OR. Email on file at Six Rivers N.F., Supervisor's Office.

Vrilakas, S. 2006. Botanist/Data Manager, Oregon Natural Heritage Information Center, Oregon State University, Portland, OR. Email on file at Six Rivers N.F., Supervisor's Office.