Plant Survey at Craters of the Moon National Monument & Preserve

By Michael Mancuso, Pahove Chapter and Kristin Kaser, INPS Member

Established in 1924, Craters of the Moon National Monument celebrated its 100th anniversary on May 2, 2024. Sara Ihrie, Vegetation Program Lead for Craters of the Moon National Monument and Preserve, invited the Idaho Native Plant Society to assist on a plant survey in anticipation of a construction project to expand a facilities complex located a short distance east of the Lava Flow Campground. On June 20, 2024, INPS members Kristin Kaser and Michael Mancuso joined Sara and another Craters of the Moon Vegetation team employee, Matthew Gorentz, to conduct the survey. A set of previously laid out pinflags delineated the boundaries of an approximately 4-acre survey area. The survey targeted species on both the Idaho Rare Plant List and the Idaho noxious weed list, but we also compiled a list of all plant species observed within the search area. We conducted the survey by walking a series of meandering transects within the delineated area.

Vegetation in the survey area supported shrub-steppe vegetation dominated by an antelope bitterbrush/Sandberg bluegrass (*Purshia tridentata*/*Poa secunda*) community type with interspersed clumps or individual limber pine. *Artemisia tridentata* ssp. *vaseyana* (mountain big sagebrush) co-occurred in a few spots, but was a less consistent associate than gray rabbitbrush (*Ericameria nauseosa*). Silverleaf phacelia (*Phacelia hastata*) appeared to be the most common forb, with western needlegrass (*Achnatherum occidentale*), hot-rock penstemon (*Penstemon deustus*), and turpentine spring-parsley (*Cymopterus terebinthus*) being other relatively common native species. Cheatgrass (*Bromus tectorum*) was widespread, but never had dense cover. The survey zone also contained patches of sparsely vegetated cinder, where Craters of the Moon buckwheat (*Eriogonum ovalifolium* var. *focarium*) was the most abundant species. The white wooly leaves of this mat-forming perennial form a showy contrast against the black cinders.

We also surveyed an adjoining, approximately 2-acre area due to its possible inclusion in the planned expansion project. An antelope bitterbrush/bluebunch wheatgrass (*Purshia tridentata*/*Pseudoroegneria spicata*) community type dominated the vegetation in this area, but otherwise it contained most of the same species observed in the primary survey zone, including interspersed limber pine.

Overall, we tallied 49 vascular plants and 2 moss species (Table 1). Craters of the Moon buckwheat was the only species on the Idaho Rare Plant List that we encountered. Although locally common in the northern portion of the Monument, this species has not been documented outside the Monument/Preserve boundary. A single rush skeletonweed (*Chondrilla juncea*) was the only noxious weed species observed. Many of the limber pine in the survey

Table 1. Botanical survey plant list. Taxonomy follows Flora of the Pacific Northwest, 2nd edition (except mosses).

Scientific name	Common name	Scientific name	Common name
Trees		*Drymocallis glandulosa*	Sticky cinquefoil
Pinus flexilis	Limber pine	*Eriogonum heracleoides*	Wyeth's buckwheat
Shrubs		*Eriogonum ovalifolium* var. *focarium*	Craters of the Moon buckwheat
Amelanchier utahensis	Utah serviceberry	*Eriogonum ovalifolium* var. *ovalifolium*	Cushion buckwheat
Artemisia tridentata ssp. *vaseyana*	Mountain big sagebrush	*Eriogonum umbellatum*	Sulphur buckwheat
Chamaebatiaria millefolium	Fern-bush	*Eriogonum vimineum*	Broom buckwheat
Ericameria nana	Dwarf goldenbush	*Gayophytum* sp.	Groundsmoke
Ericameria nauseosa	Gray rabbitbrush	*Lactuca serriola*	Prickly lettuce
Linanthus pungens	Granite prickly phlox	*Lithospermum ruderale*	Western stoneseed
Philadelphus lewisii	Syringa	*Mentzelia albicaulis*	White-stemmed mentzelia
Purshia tridentata	Antelope bitterbrush	*Penstemon deustus*	Hot-rock penstemon
Ribes cereum	Wax currant	*Phacelia hastata*	Silverleaf phacelia
Symphoricarpos rotundifolius	Mountain snowberry	*Senecio integerrimus*	Western groundsel
Forbs		*Viola* sp.	Violet
Boechera retrofracta	Rockcress	**Graminoids**	
Boechera sp.	Rockcress	*Achnatherum hymenoides*	Indian ricegrass
Brickellia grandiflora	Large-flowered brickellbush	*Achnatherum occidentale* var. *pubescens*	Western needlegrass
Calyptridium roseum	Rosy pussypaws	*Achnatherum pinetorum*	Pinewoods needlegrass
Chaenactis douglasii var. *douglasii*	Hoary chaenactis	*Bromus japonicus*	Japanese brome
Chondrilla juncea	Rush skeletonweed	*Bromus tectorum*	Cheatgrass
Cirsium inamoenum	Greene's thistle	*Elymus elymoides*	Bottlebrush squirreltail
Collinsia parviflora	Maiden blue-eyed Mary	*Leymus cinereus*	Great Basin wildrye
Crepis acuminata	Tapertip hawksbeard	*Poa secunda*	Sandberg bluegrass
Cryptantha torreyana	Torrey's cryptantha	*Pseudoroegneria spicata*	Bluebunch wheatgrass
Cymopterus terebinthus	Turpentine spring-parsley	*Thinopyrum intermedium*	Intermediate wheatgrass
Delphinium andersonii	Anderson's larkspur	**Bryophytes**	
Dieteria canescens	Hoary aster	*Grimmia* sp.	Grimmia moss
Diplacus nanus	Dwarf purple monkeyflower	*Syntrichia* sp.	Syntrichia moss

area were dead or in serious decline as evidenced by multiple dead stems and brown needles. Drought is likely the leading factor for their demise, with mistletoe another probable contributing factor for at least some trees.

The lava fields of Craters of the Moon were formed by volcanic eruptions emanating from the Great Rift, a 52-mile gash in the earth's crust. Eruptive periods began roughly 15,000 years ago and did not finish until approximately 2000 years ago. Our plant survey area abutted the North Crater Flow, formed during the most recent eruptive period. This flow contains areas with Blue Dragon lava, with its stunning bluish hue. The volcanic landscape added a geology lesson to our botanical survey. Many people are surprised to learn that Craters of the Moon supports more than 700 plant species. We observed approximately 15% of them during a survey of only a few acres. We thank Sara Ihrie for inviting INPS to assist with the plant survey and hope we can collaborate again in the future. •