

Prairie Management - Continued

there is a level prairie half a mile in width and running parallel to it."

Catlin painted a panoramic picture of the quarry, including several Indians working to extract pipestone. Although Catlin did not mention the presence of shrubs and trees along the ridge of quartzite, they appear in his painting. His pencil sketch shows little woody growth and is believed to be a more accurate presentation of the landscape of the quarry and ridge as it appeared in the 1830's.

Although well over half of the 283-acre park consists of original prairie, one is impressed today not only by the prairie, but by the trees and shrubs along the quartzite ridge and Pipestone Creek. Tree-ring evidence from a study in 1979 aged most trees sampled at around 1880. Records of land settlement in the area suggest woody plants began to grow because of the cessation of prairie fires. An article in the *Pipestone County Star* of June 24, 1880, noted the beginning of tree growth near the creek and along the quartzite ridge and expressed the hope that prairie fire will "leave the place alone" for the next few years. Photographs of the quartzite ridge taken in 1889 and in 1983 show the dramatic increase in shrub and tree cover.

Since 1973, prescribed burning has been used annually in the park's prairie management program, probably in response to the removal of woody vegetation and the enhancement of prairie grass by a wildfire which burned along Pipestone Creek in 1971. Spring burning has been conducted in each of six management units on a 4- to 5-year rotation. It has been successful in

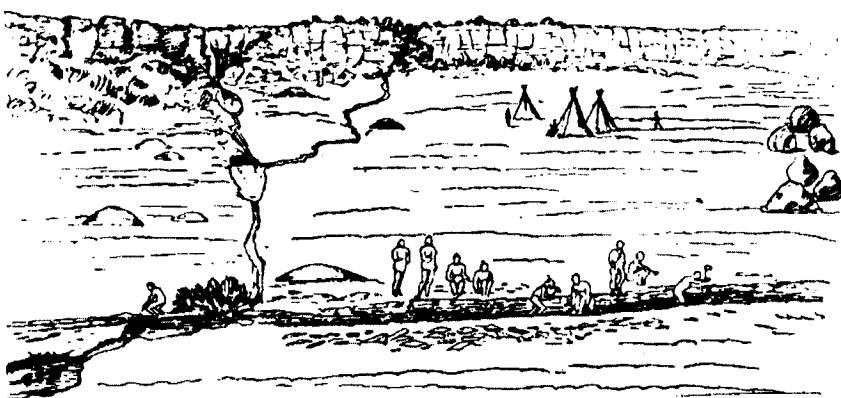
removing woody plants and restoring the dominance of native prairie species, such as big bluestem, in some areas of the monument. No attempt has been made to burn into the wooded areas along the quartzite ridge or to clear vegetation along Pipestone Creek.

In 1982, a study was begun to assess objectively the effect of current vegetation management practices, including prescribed fire, on the vegetation at Pipestone. Permanent plots and fixed point photography will be used to document vegetation changes and successional trends in the six management units. The distribution, composition, vigor and sea-

sonal periodicity of the vegetation will be determined over a 3-year period and historical factors which have impacted the vegetation will be identified and evaluated.

Results will likely influence prairie management through recommended changes in the frequency, intensity and seasonality of future prescribed fires and may lead to a decision to remove woodland vegetation in certain areas of the monument so as more closely to approximate the historic scene.

Willson is an ecologist with the NPS at Pipestone NM.



Pencil sketch of the pipestone quarry made in 1836 by George Catlin, courtesy of the National Archives.

Dwarf Nightshade At Crater Lake NP

Editor's Note: The following article is taken from a report to Resource Management Specialist Mark Forbes, Crater Lake NP, by Ron and Joy Mastrogiuseppe. The full report, with literature cited, is available from the Park.

On a recent autumn visit to the Crater Peak Burn of August 1978, Ron Mastrogiuseppe and John White confirmed the presence of colonies of dwarf nightshade, *Chamaesaracha nana* A. Gray in the portion of burn which crowned-out in Shasta red firs and exposed the volcanic substrate on the steep southwestern slope. A member of the nightshade family, Solonaceae, the plant is locally rare in the Crater Lake NP area.

Dwarf nightshade is adapted to well-drained, dry, sandy, or gravelly volcanic substrates, and may be favored by certain kinds of disturbances. Its general geographic distribution ranges from south central Oregon southward into the Lake Tahoe Region of east central California, from

approximately 5,000 to 8,500 feet elevation.

Other notable members of the Solonaceae include potato, tomato, tobacco, and the pepper.

Mastrogiuseppe's report discusses at some length a revisionary study of the genus *Chamaesaracha*, recommending that dwarf nightshade be called *Leucophysalis nana* (Gray) Averett, making it a natural, closely related genus restricted to desert regions of the southwestern U.S.

They also describe searches of herbaria within the Pacific Northwest to determine if any voucher specimens exist from within or near Crater Lake NP. (A voucher specimen is one that has been verified and placed in a permanent collection as a standard against which new finds may be checked.) The park collection includes only one sheet displaying two small non-flowering plants, collected by Elmer Ivan Applegate on July 24, 1934, on a dry slope of Bald Crater in the northwestern portion

of the park. No other vouchers are known, except for a possible sighting within the old Greyback Burn (by Richard Brown in 1982) and a specimen collected by Joy Mastrogiuseppe on Aug. 14, 1978 in the middle strip of the old fireroad along the southeastern flank of Crater Peak.

The report describes other searches and the species' general distribution and concludes that "disturbance may be the key in the general perpetuation of dwarf nightshade." This is presented as a hypothesis only, with more evidence required for substantiation.

The Mastrogiupes recommend that *Leucophysalis nana* be placed on the Watchlist of the Oregon Rare and Endangered Plant Project.

Ron Mastrogiuseppe is plant ecologist at Redwoods NP; Joy is with the Marion Ownbey Herbarium, Department of Botany, Washington State University.