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Cimicifuga elata — Tall Bugbane

By THOMAS KAYE

This year's featured plant is a rare species that has attracted the attention of botanists concerned with its survival in western forests. Tall Bugbane (*Cimicifuga elata*), a member of the buttercup family (*Ranunculaceae*), occurs from the lower Fraser Valley in British Columbia, through western Washington, to southern Oregon. It is an herbaceous perennial usually four to six feet tall with compound leaves and spray-like clusters of white flowers. The flowers themselves do not have any petals, but instead are made showy by an abundance of white stamens. The species has special management status with the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM), and it is a candidate for listing as threatened or endangered with the state of Oregon.

Tall bugbane is unusual compared to most rare plants. Typically, rare species have populations composed of hundreds or thousands of individuals, but populations are restricted to a small geographic area. Tall bugbane, in contrast, usually has small populations (over half contain fewer than 25 plants) and it occurs over a large range. Oddly, though, in the southern part of the species' distribution its populations are almost always very large, with plants numbering in the thousands. There is no confirmed explanation for this peculiar pattern, but some hypotheses have been proposed. For example, more extensive optimum habitat may be available in southern Oregon, and/or populations in this area may be evolutionarily and taxonomically divergent.

Tall bugbane is one of fifteen *Cimicifuga* species in the world. All are north-temperate and six occur in North America. One other species in the genus, Mt. Hood bugbane (*C. laciniata*), occurs in Oregon in the vicinity of its lofty namesake. In *Flora of the Pacific Northwest*, Hitchcock and Cronquist explain that the genus name *Cimicifuga* comes from the latin *cimex* (bug) and *fugere* (to repel), because at least one species can be used to repel bed-bugs! The entire genus is well known for its medicinal properties, especially as an anti-inflammatory, anti-spasmodic, sedative, and soother of menstrual cramps. The medicinal potential of these plants underscores the practical need for conservation and protection of tall bugbane.

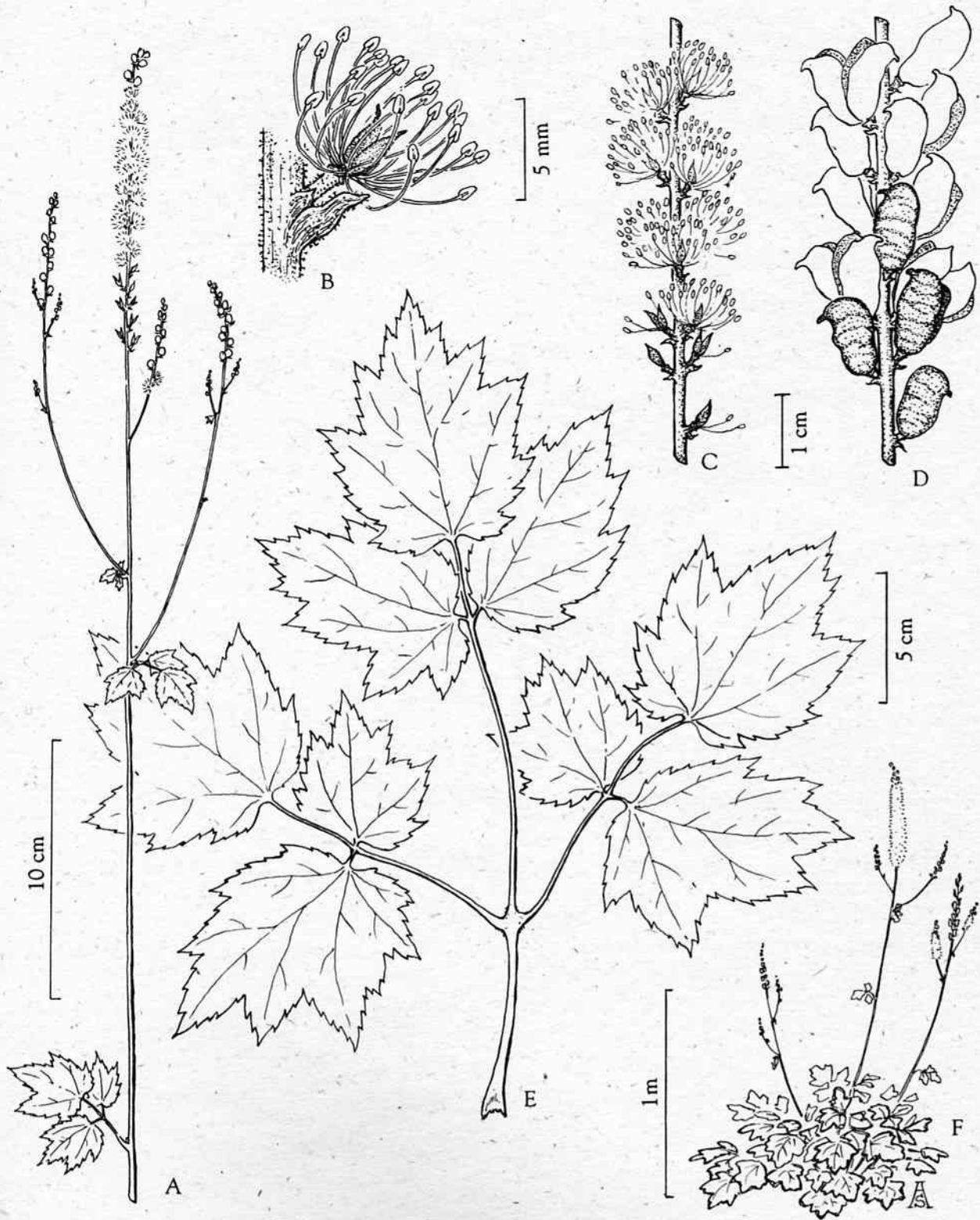
The presence of tall bugbane in west-side forests creates the potential for conflict with timber harvests, so federal and state agencies collaborated recently to evaluate the species' current status, habitat requirements, and response to logging. According to Natural Heritage Program database records, there are about 100 populations in Oregon and 30 in Washington. Field

research indicates that the species almost always occurs under a patch of deciduous trees (such as big-leaf maple) in an otherwise coniferous forest (usually dominated by Douglas fir, western hemlock, and western red cedar). In addition, the species prefers north-facing slopes and some source of moisture, either in the form of a nearby stream or subsurface flow. Beyond these commonalities, however, the plant communities in which bugbane populations occur differ significantly from one region to another, such as the Columbia Gorge, central Cascades, and southern Oregon. Descriptions of regional habitat-types for tall bugbane have already improved the efficiency and success of searches for the species.

Conventional wisdom holds that tall bugbane should be negatively affected by timber harvest because it typically occurs in old-growth forest. However, analysis of populations in several different types of managed and unmanaged forests shows clearly that plants in clearcuts and thinned stands are taller and have more flowers than in uncut forests or old second growth (greater than 70 years). In addition, recruitment (birth) and growth of new individuals is greater in clearcut and thinned stands. Some timber harvest is probably compatible with tall bugbane conservation, but we do not advocate clearcuts as a means to improve conditions for the species. This is primarily because we have no information on what happens to populations 15-30 years after timber harvest, when some young forests are so dense that light levels are even lower than in old-growth forests. Instead, conservation of tall bugbane should rely on protection of some populations combined with careful manipulation of the forest habitat of others, such as thinning and prescribed fire. The short-term (or longer) tolerance of bugbane populations to forest disturbance coupled with the relatively large number of reported populations is encouraging, and will allow conservation efforts to be flexible and creative.

The wide distribution of tall bugbane in Oregon makes it fairly accessible to interested NPSO members. Populations are best viewed in June and July when plants are in bloom. If you live in southern Oregon, the easiest population to visit is at Grizzly Peak east of Ashland. In the Willamette Valley, try the "New Growth Trail" in Oregon State University's McDonald Forest.

Additional information on tall bugbane research by botanists from the Oregon Department of Agriculture, USFS, and BLM is available from the author in a technical report entitled, "*Cimicifuga elata*: Status, Habitat Analysis, Monitoring, Inventory, and Effects of Timber Management."



Cimicifuga elata. A) scape; B) close-up of flower; C) part of the raceme showing flowers and developing follicles; D) mature follicles; E) basal leaf; F) habit.

The botanical illustrator, **Andy Sudkamp**, lives in Grants Pass.

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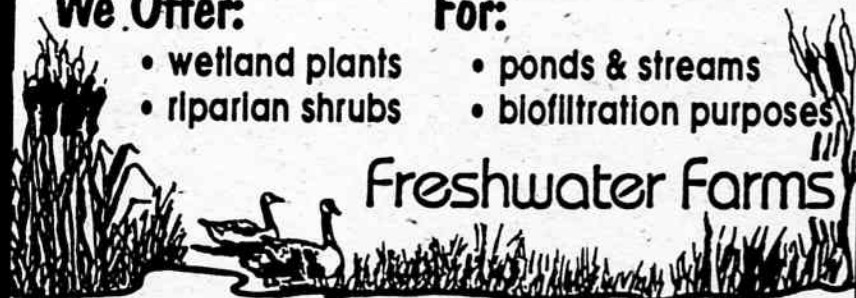
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