



Natural Heritage & Endangered Species Program

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MASSCHUSETTS WATCH LIST PLANTS

Goldie's Fern

Dryopteris goldiana (Hook) A. Gray

State Status: Delisted

Federal Status: None

DESCRIPTION: Goldie's Fern--or giant wood fern--is a large, coarse fern that grows in scattered clumps. The plant grows from a thick rhizome that is covered with old leaf stalks and scales. The 7.5-12 dm (2.5 - 4 ft.) long leaves are leathery, dark bluish-green, backwards-bending, and semi-evergreen and may be up to 30 cm (a foot) wide. Each leaf is divided into 12 to 16 pairs of pinnae (or leaflets). These leaflets are double-tapered (with the broadest point near the middle), and small sori (clusters of spore-bearing structures) are located near the midvein on their undersides. Rust-colored scales cover the lower leafstalks.

SIMILAR SPECIES IN MASSACHUSETTS:

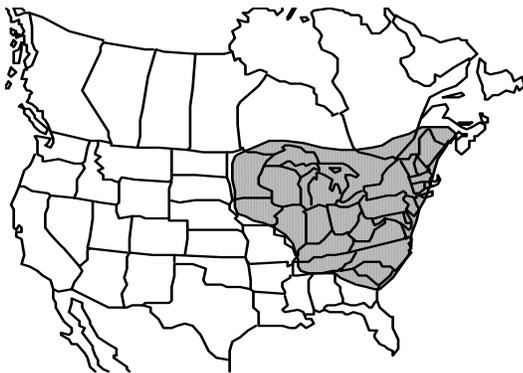
This species could be confused with the marginal wood fern (*Dryopteris marginalis*). In contrast to Goldie's fern, however, the sori of marginal wood fern are not near the midveins but, rather, near the margins of the leaflets; and, its leaflets are not double-tapered like those of Goldie's fern.

RANGE: The documented range of Goldie's fern extends from western New Brunswick through southern Ontario to Minnesota, and south to northern Georgia, angling northwest through Tennessee to Iowa.



Goldie's Fern. Photo: Bruce A. Sorrie

HABITAT IN MASSACHUSETTS: Goldie's fern is found in rich mesic woods (a forest type with moderately moist soil that has a good deal of humus and that is rich in nutrients, especially calcium). The rich mesic woods that Goldie's fern favors is an uncommon habitat-type in Massachusetts, found mostly in limestone areas in the Berkshires and Connecticut River Valley region. In Massachusetts, specific habitats include a swamp with limy soil and a brook running through it; a moist brookside with both swamp vegetation and rich woods vegetation; an open, boggy swale; a moist, shaded rocky notch above an abandoned marble quarry; a wooded boulder and talus slope; and a variety of rich mesic woods, frequently located near or on rock outcrops and ledges. Associated plant species include sugar maple (*Acer saccharum*), white ash (*Fraxinus americana*), basswood (*Tilia*



Documented Range of
Goldie's Fern

americana), yellow birch (*Betula alleghaniensis*), mountain maple (*Acer spicatum*), glade fern (*Diplazium pycnocarpon*), Jack-in-the-pulpit (*Arisaema triphyllum*), purple trillium (*Trillium erectum*), large-flowered bellwort (*Uvularia grandiflora*), sharp-lobed hepatica (*Hepatica acutiloba*) and wild garlic (*Allium tricoccum*). Rare Massachusetts species that have been found with Goldie's fern include ginseng (*Panax quinquefolius*), downy wood-mint (*Blephilia ciliata*), woodland millet (*Milium effusum*) and the Watch Listed swamp red currant (*Ribes triste*).

POPULATION STATUS IN

MASSACHUSETTS: Goldie's fern is currently on an unofficial Watch List in Massachusetts. Although it is not afforded any special protection under state or federal laws, the Natural Heritage and Endangered Species Program are interested in obtaining information on any populations. Goldie's fern was removed from the state's list in 1985 because it was no longer considered to be threatened; in 1990 there were 29 current sites (discovered or relocated since 1978) in 20 localities within the Commonwealth. Goldie's fern grows primarily in the western region of Massachusetts. The infrequent distribution of appropriate habitats contributes to its rarity here. Goldie's fern is considered rare in many states, including Maine, New Hampshire, Connecticut, Delaware, South Carolina, Alabama and Missouri.



Goldie's Fern. Photo: Bruce A. Sorrie

MANAGEMENT RECOMMENDATIONS: As with most uncommon species, the exact needs of Goldie's fern are not known. The following comments are based on observations of the populations in Massachusetts. Goldie's fern is a species that requires shade. Every effort should be made to minimize fragmentation of its forest habitat and not subject this species to full sun as a result of openings in the canopy. As with any plant, soil compaction around the roots or rhizomes (from trampling, vehicles, or deposition by erosion) can reduce vitality or kill outright. The species usually occurs in particular moisture regimes: disturbance of this moderate regime would negatively impact the plants: seepage areas should be maintained, and the ground water levels neither raised nor lowered.

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