Technical Report

Wetland Flora

No. 95-8 / November 1995

Gene Silberhorn

Netted Chain Fern

***Woodwardia areolata* (L.) T. Moore**

Growth Habit and Diagnostic Characteristics

Netted chain fern is a medium sized fern with leaves (fronds) 40 to 60 cm (15 to 24 in.) tall that produces two different types (dimorphic) of fronds. The vegetative or sterile fronds are pinnately compound with alternately arranged leaflets (pinnae). Veins are arranged in chain-like patterns on the pinnae, hence the common name, netted chain fern. Fertile fronds have more narrow, thicker pinnae with elongated, raised ridge-like structures (indusia) which enclose many spore cases called sporangia. Indusia are also arranged in chain-like fashion. The fertile fronds are often taller than the sterile fronds. *Woodwardia areolata* occurs in colonies of both sterile and fertile fronds emerging from underground rhizomes. Brown, spore-less fertile fronds of the previous season are frequently present in the colony. The dimorphic fronds, alternate pinnae, netted or chain-like veins and elongated indusia are diagnostic features of netted chain fern. Another fern that may be confused with this species is sensitive fern (*Onoclea senisbilis*). Both species often occur in the same habitat. Sensitive fern also has dimorphic fronds, but the pinnae of both types are usually oppositely arranged. The sporangia (sori) of *Onoclea* are enclosed by curling pinnae, so that the fertile pinnae appear as bead-like structures. A closely related species, Virginia chain-fern (*Woodwardia virginica*), has less distinct chain-like veins and does not have dimorphic fronds.

Distribution

Woodwardia areolata is found mainly in various wetland habitats along the Atlantic Seaboard (coastal plain and piedmont) from Rhode Island to Florida and in the Gulf States. Isolated populations also occur in certain interior areas of Eastern United States.

Habitat

Along the New England coastal plain, *Woodwardia areolata* is frequent in acidic bogs and red maple swamps. In the Mid-Atlantic Region, it occurs in palustrine forested wetlands, around shaded springs or seeps and on the margins of swamps. This fern is often associated with other wetland ferns such as cinnamon fern, *Osmunda cinnamomea* (Wetland Flora, No. 93-14 / January 1993), sensitive fern (*O. sensibilis),* and royal fern (*Osmunda regalis*).

Ecological Values / Benefits

Wetland ferns, such as netted chain fern, frequently grow in seepage areas at the bases of shaded banks or around natural springs. These small wetlands are often overlooked by the casual observer. This fern, as well as others listed above, are good indicators of isolated wetlands. The greatest value may be simply the aesthetics of a diverse community of different fern species.

Hydrophytic Factor / Wetland Indicator Status

According to the *National List of Plant Species that Occur in Wetlands: Virginia (1988), Woodwardia areolata* is classified as a **facultative wetland plant (FACW).** FACW plants "usually occur in wetlands (estimated probability 67 - 99%)."

Woodwardia areolata (L.) T. Moore

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Illustration by Kent Forrest

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