Common Name: NARROWLEAF NAIAD

Scientific Name: *Najas filifolia* Haynes

Other Commonly Used Names: needle-leaf water-nymph

Previously Used Scientific Names: *Najas ancistrocarpa* Magnus (misapplied)

Family: Najadaceae (naiad) or Hydrocharitaceae (frog's-bit)

Rarity Ranks: G1/S1

State Legal Status: Endangered

Federal Legal Status: none

Federal Wetland Status: OBL

Description: Submerged **aquatic herb** with smooth, slender, red-brown, much-branched stems, 2¾ - 9 inches (7 - 22 cm) long. **Leaves** ¼ - 1 inch (0.8 - 2.6 cm) long, very narrow, orange-red to greenish-brown, translucent, clustered at the tips of branches, curved slightly downwards, with 5 - 9 soft, non-spiny teeth on each side of the leaf; leaf base expanded into a **sheath** much wider than the leaf, its edge curved and only slightly toothed. **Flowers** tiny, solitary in the angle between leaf and stem, female flowers on the lower stem, male flowers on the upper stem. **Female flowers** consist of 1 ovary and a 4-lobed stigma; **male flowers** consist of 1 stamen

enclosed in a 4-lobed bract. **Seed** ⅛ inch long, strongly curved or crescent-shaped, seed coat bumpy with 20 rows of rectangular pits. Neither leaves nor stems are spiny.

Similar Species: Spiny-leaf naiad (*Najas minor*) has stiffly down-curved leaves with spiny teeth; the leaf sheath is strongly toothed; the seed is pitted and tapered at both ends but not strongly curved. Southern naiad (*N. guadalupensis*) leaves are scattered along the stems and are not down-curved; leaves have tiny, barely visible teeth; seed is oval.

Related Rare Species: None in Georgia.

Habitat: Sand-bottomed ponds and lakes, usually tannin-stained.

Life History: Narrowleaf naiad is an annual herb that reproduces sexually and possibly asexually through stem fragmentation. It is monoecious – female and male flowers occur on the same plant. Male flowers release pollen underwater; the pollen is heavier than water and slowly sinks or is moved by water currents, occasionally contacting a female flower. Naiads are important food sources for ducks and other waterfowl.

Survey Recommendations: Plants are most conspicuous mid-summer–fall; flowers and fruits are present August–October. Seeds are important for identification.

Range: Georgia and Florida.

Threats: Pollution, sedimentation, and degradation of ponds. Altering natural water levels. Competition from exotic, invasive water plants. Drawdown of water table from irrigation wells. Use of herbicides in ponds and surrounding areas.

Georgia Conservation Status: Two populations are known, neither on conservation land. One population has not been seen since 1948.

Conservation and Management Recommendations: Prevent pollution runoff into lakes. Protect natural hydrology of lakes and ponds by preventing excessive ground water withdrawal. Allow fires in uplands to burn into edges of ponds. Eradicate aquatic pest plants but avoid use of herbicides in ponds with this species.

Selected References:

Burks, K.C. 1995. Noteworthy collections: Florida – *Najas filifolia*. Castanea 60(2): 169-170.

Chafin, L.G. 2007. Field guide to the rare plants of Georgia. State Botanical Garden of Georgia and University of Georgia Press, Athens.

FNA. 2000. Flora of North America, Vol. 22, Magnoliophyta: Alismatidae, Arecidae, Commelinidae (in part), and Zingiberidae. Oxford University Press, New York.

Godfrey, R.K. and J.W. Wooten. 1979. Aquatic and wetland plants of southeastern United States, Vol. 1, monocotyledons. University of Georgia Press, Athens.

Haynes, R.R. 1977. The Najadaceae in the southeastern United States. Journal of Arnold Arboretum 58: 161-170.

Haynes, R.R. 1979. Revision of North and Central American *Najas* (Najadaceae). Sida 8: 34-56.

Haynes, R.R. 1985. A new species of *Najas* (Najadaceae) from the southeastern U.S.A. Brittonia 37(4): 392-393.

NatureServe. 2007. NatureServe Explorer. Arlington, Virginia. http://www.natureserve.org/explorer

Weakley, A.S. 2008. Flora of the Carolinas, Virginia, Georgia, northern Florida, and surrounding areas. University of North Carolina Herbarium, Chapel Hill. http://www.herbarium.unc.edu/flora.htm

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Leaves and fruit

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