Common Name: HIRSTS' WITCH GRASS

Scientific Name: *Dichanthelium hirstii* (Swallen) Kartesz

Other Commonly Used Names: Hirst brothers panic grass, Hirsts' panic grass

Previously Used Scientific Names: *Panicum hirstii* Swallen

Family: Poaceae/Gramineae (grass)

Rarity Ranks: G1/SH

State Legal Status: Endangered

Federal Legal Status: Candidate

Federal Wetland Status: OBL

Description: Perennial **grass** with smooth, purplish-green **stems**, 2 - 4 feet (60 - 120 cm) tall. **Basal rosette leaves** 1⅛ - 1½ inches (3 - 4 cm) long, lance-shaped. **Stem leaves** 1¾ - 5½ inches (4.5 - 14 cm) long, longest at mid-stem; about ⅛ - ¼ inch (3.5 - 6 mm) wide near the base of the blade; narrowly lance-shaped with long-tapering tips, erect, purple-tinged, smooth except for hairy margins. Leaves on spring-flowering stems are flat, inrolled only at the tips; leaves on the

fall-flowering stems are erect and strongly inrolled along the margins. The base of the stem leaf forms a sheath around the stem; on the inside of the sheath, at the junction with the leaf blade, there is a narrow band of tiny hairs. **Flowering spike** 2¾ - 3½ inches (7 - 9 cm) long, less than ¼ inch wide, with short, twisted, stiffly erect, thread-like branches. **Flower (spikelet)** at branch tip, oval with a blunt tip, hairless, strongly ribbed, enclosed in a series of tiny bracts (glumes and lemmas).

Similar Species: There are nearly 50 witch-grass (*Dichanthelium*) species in Georgia; positive identification depends on an understanding of the technical terms for grass flowers and fruits, and on magnification by 10x lens. Hirsts' panic grass is best distinguished by its narrow flowering spike with stiffly erect branches; hairless, blunt spikelets; purplish-green stems; and fall-flowering spikelets hidden in the leaf sheaths.

Related Rare Species: Southeastern panic grass (*Panicum tenerum*) and nerved witch grass (*Dichanthelium neuranthum*) are Special Concern in Georgia.

Habitat: Sandy, peaty, or mucky areas within limesink, cypress, and flatwoods ponds dominated by other grasses and sedges with a surrounding fringe of pond cypress, pine, red maple, and ash.

Life History: Named in honor of two brothers, Frank and Robert Hirst, who discovered this species in New Jersey, Hirsts' (note the plural possessive) witch grass is a perennial grass that reproduces sexually. It overwinters as a low, leafy rosette and then flowers at two separate times, in the late spring and again in the fall. Its flowers are wind-pollinated, and its seeds are probably dispersed by both gravity and small animals. The seeds apparently persist in the soil seed bank, waiting for favorable hydrological conditions. More than two years of high water will kill the plants, but seeds survive in the soil seed bank and germinate when water levels subside. The plants depend on occasional fire to kill competing woody species and maintain an open, grassy habitat around pond edges.

Survey Recommendations: Surveys are best conducted during the two flowering periods, May–June and late August–frost, depending on rainfall. Population sizes fluctuate depending on water levels, and plants may not be present every year.

Range: Currently known from 2 populations in North Carolina, 1 in Delaware, and 3 in New Jersey; there are likely fewer than 1000 plants in existence. Plants in Georgia have not been seen in many decades.

Threats: Ditching, draining, and filling wetlands; construction of firebreaks around ponds; fire suppression; conversion of habitat to pastures, pine plantations, and agriculture.

Georgia Conservation Status: Three populations were known before 1960, all on private land, but none has been seen since. Because plants are inconspicuous and hard to identify, and are not visible every year, there may be undiscovered populations.

Conservation and Management Recommendations: Avoid draining and ditching isolated wetlands. Protect isolated wetlands from polluted runoff from surrounding fields and pine plantations. Allow fires in surrounding uplands to burn into the edges of ponds. Avoid placing firebreaks and roads around ponds.

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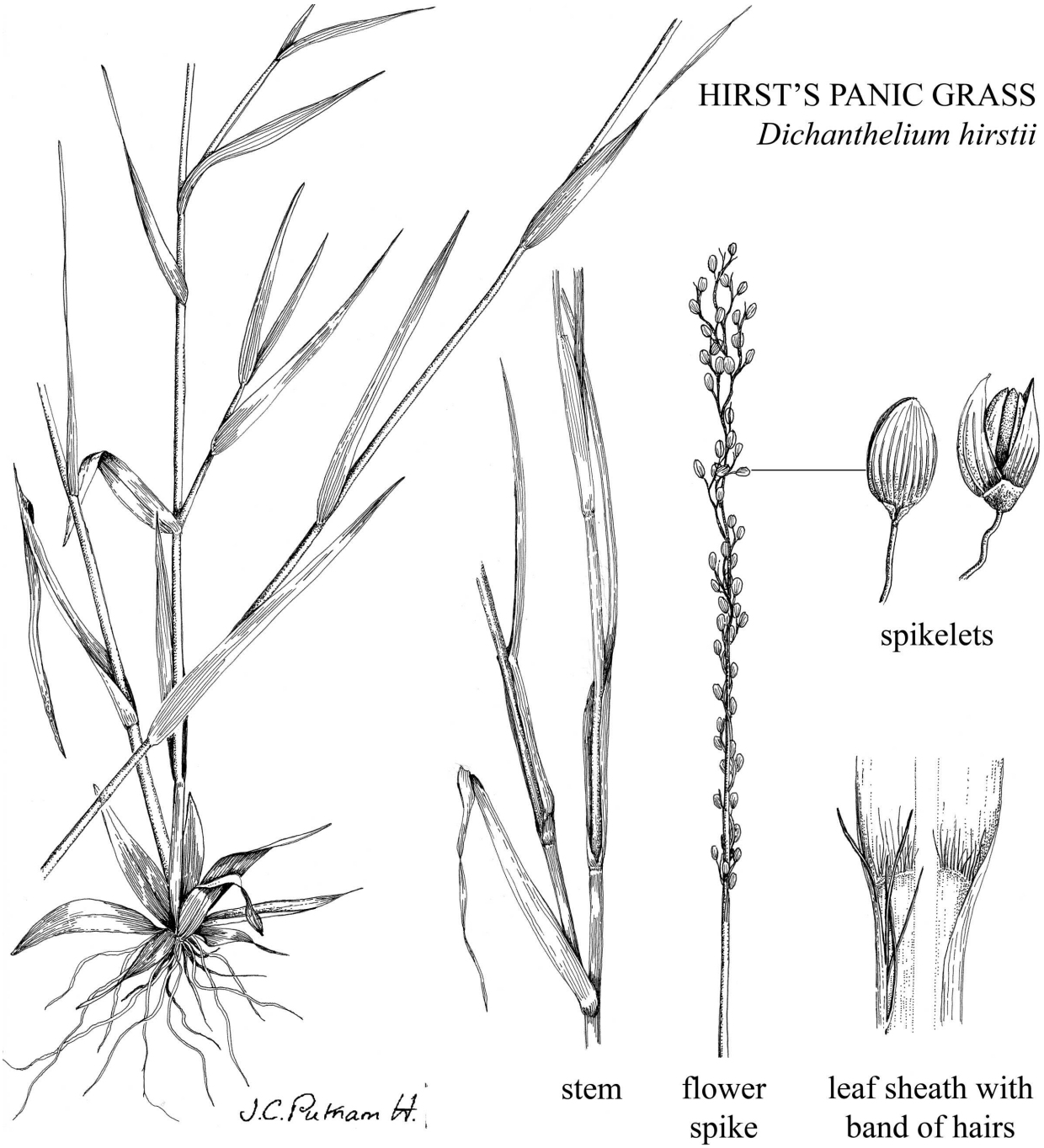
Date Compiled or Updated:

L. Chafin, Feb. 2007: original account

K. Owers, Jan. 2010: updated status and ranks, added pictures


HIRST'S PANIC GRASS
Dichanthelium hirstii
spikelets
J.C. Putnam
stem
flower spike
leaf sheath with band of hairs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