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Technical Report

Wetland Flora



No. 92-9 / September 1992

Gene Silberhorn

Big Cordgrass Giant Cordgrass

Spartina cynosuroides (L.) Roth

Growth Habit and Diagnostic Characteristics

Big cordgrass is a robust, coarse, perennial grass found in brackish to nearly freshwater tidal marshes along the Atlantic Coast. This majestic grass ranges from 2 to 4 meters tall (6 to 12 feet).

Spartina cynosuroides reaches maturity (reproductive stage) in late summer to early autumn (August to September). Its identification signature or diagnostic characteristic is the coarsely branched inflorescence extending well above the leaves. The flowering head is green, but turns tan when in seed in late fall (October to November). Although big cordgrass reproduces by seed, it spreads dramatically and extensively by long, stout rhizomes, forming dense monospecific stands in many marshes.

A large number of leaves originating from the tall stem (culm) give the grass a very robust appearance. The long (2 to 5 feet) blades have minute tooth-like serrations along their margins. The leaves can cause scrapes and cuts to exposed skin when walking through a dense stand.

Big cordgrass is the largest of the *Spartina* marsh grasses found in coastal tidal wetlands. Saltmarsh cordgrass, *Spartina alterniflora* (Wetland Flora, No. 90-2, July 1990) grows from 4 to 7 feet tall in the intertidal zone of salt and brackish marshes. Saltmeadow hay, *Spartina patens* (Wetlands Flora, No. 90-4, September 1990) is a much shorter, wirey grass occupying the higher parts of salt and brackish marshes.

Two other tall grasses are often found growing with *Spartina cynosuroides* in tidal freshwater marshes. Northern wild rice (*Zizania aquatica*) is easily distinguished from big cordgrass. *Zizania* has a finer, more delicate inflorescence, and in flowering stage is yellowish in appearance, whereas big cordgrass is coarser and green. Wild rice also does not appear as robust as *S. cynosuroides*. The other grass often found in disturbed marshes, reed grass (*Phragmites australis*), (Wetland Flora, No. 91-1/January 1991) has shorter, broader leaves without teeth along the margins. The inflorescence (panicle) of *Phragmites* is often described as feathery or flag-like, taking the shape dictated by prevailing winds. Reed grass is a very aggressive grass that often competes with native marsh plants, including big cordgrass and wild rice.

Density and Production

Spartina cynosuroides is a very productive marsh grass, rivaled only by *S. alterniflora* in annual production. The average range of stem density in monospecific stands, as reported in the literature is 100 to 160 stems per meter squared or from 10 to 15 stems (culms) /ft². Annual production is quite variable, depending on density and locale, but ranges between 3 to 6 tons per acre per annum.

Distribution

Big cordgrass is found in tidal wetlands, brackish to fresh, from New England to the Gulf Coast.

Habitat

Big cordgrass, unlike saltmarsh cordgrass, is seldom found in high saline salt marshes behind barrier islands and spits along the Atlantic. *S. cynosuroides* is more likely to be found further from the ocean, in tidal sounds, bays and tidal rivers. In Virginia, large, dense stands are found along the lower reaches of the Pamunkey and Mattaponi rivers, tributaries of the York River. Large stands are also found along the mid-reaches of the Rappahannock and Potomac rivers. Unlike *S. alterniflora*, which grows between mean sea level and mean high water, this giant grass usually grows above mean high water. The illustration shows a stand of big cordgrass growing above and behind clumps of arrow arum, *Peltandra virginica* (Wetlands Flora, No. 90-6/November 1990). The latter usually occupies the intertidal zone and the former above mean high water. The illustration was sketched in the field along the lower reaches of the Mattaponi River, above West Point, Virginia.

Ecological Values/Benefits

Spartina cynosuroides is one of the most productive grasses of tidal wetlands, having production estimates similar to *S. alterniflora*, perhaps the most important tidal marsh plant based on production and detritus availability to receiving waters. Detritus, decomposed plant material, becomes a major component of the estuarine food web. Detritus originating from big cordgrass is accessible to receiving waters only on spring tides or storm surges, because it typically grows in the higher part of the marsh. Dense stands provide cover and food for wildlife. Geese often eat the large rhizomes and muskrats use stems and leaves for material in lodge construction. Duck hunters frequently use big cordgrass as camouflage for duck blinds.

Holistically, detritus produced by wetland vascular plants, phytoplankton and benthic algae in these systems serves as an energy source for an array of organisms, many of which are commercially important. The entire ecosystem of tidal wetlands is a primary spawning and nursery habitat for anadromous and resident fishes.

Hydrophytic Factor/Wetland Indicator Status

According to the *National List of Plant Species that Occur in Wetlands: Virginia* (1988), *Spartina cynosuroides* is classified as an **obligate wetland plant (OBL)**. OBL plants almost always occur in wetlands (>99% probability).

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