



# SALTMEADOW CORDGRASS

## *Spartina patens* (Aiton) Muhl.

Plant Symbol = SPPA

### Alternative Names

**Common Names:** couchgrass, marshhay cordgrass, salt meadow grass, salt meadow hay, salthay, saltmarsh cordgrass, saltmeadow cordgrass, small saltmeadow cordgrass, wiregrass

**Scientific Names:** *Spartina patens* (Aiton) Muhl. var. *junceae* (Michx.) Hitchc., *Spartina patens* (Aiton) Muhl. var. *monogyna* (M.A. Curtis) Fernald, *Spartina pumila* Roth, *Spartina versicolor*, *Sporobolus pumilus* (Roth) P.M. Peterson & Saarela

### Description

**General:** This warm season, native, perennial grass grows from 1-4 feet tall and spreads extensively by long slender rhizomes. Dark green stems emerge from the rhizomes. The rolled leaf blades are typically 0.5-1.0 feet long, and 0.1-0.2 inches wide. Leaf blades are shiny, dark green on the upper surface and rough with prominent veins on the lower surface. Leaves are drooping and wiry in appearance. From late June to October, an inflorescence composed of 2-10 spikelets (approximately 2 inches in length) emerges at the end of the stem. The numerous florets are 0.3-0.4 inches long and arranged in an overlapping scale-like fashion on each spikelet. The flowers are wind pollinated and self-sterile (Barkworth, 2003; Gould, 1975). Saltmeadow cordgrass averages 110,000 seeds/lb (USDA-NRCS, 2021).

**Distribution:** Saltmeadow cordgrass has been observed from the Atlantic shorelines in Newfoundland, Canada to the coastlines of Florida and Texas and as far south as Quintana Roo in Mexico (Stalter, 1992; Stalter, 1993; Gould, 1975; Sauer, 1967). Saltmeadow cordgrass has also been observed along Lake Huron in Michigan (Voss, 1972). It also occurs in California, Oregon, and Washington where it is considered invasive (CIPC, 2020; Kratville, 2021; WSNWCB, 2020; ODA, 2020). For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

**Habitat:** Saltmeadow cordgrass is commonly found in saline to brackish marshes, sandy beaches and low dunes, tidal flats and marsh ridges. It can inhabit foredunes and primary dunes, and can survive in saturated soil conditions (Stalter, 1974; Stalter & Lamont, 1997; van der Valk, 1975).

### Adaptation

Saltmeadow cordgrass is adapted to a wide range of soils from coarse sands to silty clay sediments with a pH range of 4.5-7.1 (Martin, 1959). Saltmeadow cordgrass will tolerate irregular inundations with 0-35 parts per thousand salinity; the concentration required for 50% above ground tissue death ranges from 63-93 parts per thousand (Hester, Mendelssohn, & McKee, 1996). Leaf blades have a thick cuticle and are usually involute when fully developed which helps protect the plant from salt spray injury (Oosting, 1945).

### Uses

**Conservation Applications:** Saltmeadow cordgrass is used for shoreline protection and tidal marsh restorations. It is often utilized for levee stabilization and dune stabilization plantings near coastal beaches and on barrier islands. It is an important species for dissipating wave energy in low topography relief coastlines (Stallins, 2002). Saltmeadow cordgrass is an effective stabilizer used on interior mud flats, dredge fill sites, and other areas of loose and unconsolidated soils associated with marsh restoration (Burger & Shisler, 1983). However, saltmeadow cordgrass colonies can be buried and killed by sand accumulation of 3 feet or more (Courtemanche, Hester, & Mendelssohn, 1999). Saltmeadow cordgrass is reported to inhibit the spread of aggressive rhizomatous species. Encroachment by European common reed (*Phragmites australis*) was blocked by saltmeadow cordgrass in restored marshes in New Jersey (Wang, Seliskar, Gallagher, & League, 2006). Saltmeadow cordgrass may play



A native stand of saltmeadow cordgrass growing in a natural sandy dune habitat.

an important role for remediating and restoring marshes after oil spills. Saltmeadow cordgrass dominated coastal wetlands are predicted to recover from oil spills without additional intervention procedures (DeLaune, Pezeshki, Jugsujinda, & Lindau, 2003).

A comparative study of three USDA Natural Resources Conservation Service (NRCS) Plant Materials Program saltmeadow cordgrass varieties measured and analyzed height, vegetative coverage, stem density, stem diameter, and biomass production data (Snell, 2024). The published findings may have important implications on variety selection for a number of USDA-NRCS conservation practice standards: Conservation Cover (327), Contour Buffer Strips (332), Cover Crop (340), Critical Area Planting (342), Field Border (386), Riparian Herbaceous Cover (390), Riparian Forest Buffer (391), Filter Strip (393), Wildlife Habitat Planting (420), Hedgerow Planting (422), Streambank and Shoreline Protection (580), Cross Wind Trap Strips (589C), Nutrient Management (590), Vegetative Barrier (601), Herbaceous Wind Barriers (603), and Vegetated Treatment Area (635) (USDA-NRCS, 2019).

**Wildlife:** Saltmeadow cordgrass provides food and cover for many terrestrial and aquatic wildlife species including muskrats, nutria, rabbits, ducks, white-footed mouse, and meadow vole (Stutzenbaker, 1999; Abuzeineh et al., 2007). Pratt-Phillips, Stuska, Beveridge, and Yoder (2011) reported that saltmeadow cordgrass is a consistent constituent (5.6-8.8%) of the diet of feral horses that live on Shackleford Banks of Cape Lookout National Seashore, NC. In Canada, saltmeadow cordgrass is known to be a larval host of the endangered maritime ringlet butterfly (Sei, 2009).

Saltmeadow cordgrass provides critical breeding habitat for saltmarsh and seaside sparrows, both of which are federally ranked species of conservation concern (Gjerdrum, Elphick, & Rubega, 2005; Roberts et al., 2017; USFWS, 2021). The saltmarsh sparrow is a migratory bird species that nests exclusively in salt marshes where saltmeadow cordgrass is commonly the dominant vegetation (Gjerdrum et al., 2005; Watson et al., 2016). The saltmarsh sparrow depends on vegetative canopy coverage, a service provided by saltmeadow cordgrass, as a means of protection from nest predation during their breeding season (Hartley & Weldon, 2020). Studies examining saltmarsh sparrow nesting practices suggest that their preferred habitat for nesting is in areas dominated by saltmeadow cordgrass taller than similar sites not selected for nesting purposes (Gjerdrum et al., 2005). Depending on the individual wildlife habitat requirements and preferences, saltmeadow cordgrass varieties may provide varying degrees of habitat quality depending on their phenotypic differences (Snell, 2024). Species and variety selection for the implementation of the USDA-NRCS Wetland Wildlife Habitat Management (644) conservation practice standard may be of special concern to conservation planners when saltmarsh sparrow and broader salt marsh bird habitat is a focal point of the conservation plan (Boagart, 2019; Hartley & Weldon, 2020).

**Forage:** Saltmeadow cordgrass is considered an important forage species to livestock producers. Livestock producers have historically utilized saltmarsh meadows as a natural pasture and allowed their stock (cattle and sheep) to forage on saltmeadow cordgrass along the Gulf coast of Texas to the Atlantic coast of the Northeast United States (Duncan and Duncan, 1987; Sebold, 1992; Silberhorn, 1999; Stutzenbaker, 1999). Saltmeadow cordgrass is cut and dried for hay in the Mid-Atlantic region, New England, and Newfoundland (Mathis, 1975; Stalter, 1992; Stutzenbaker, 1999; Stalter, 2003). The hay produced is often referred to as salt marsh hay or simply salt hay and is used as cattle feed and bedding for horses and cattle (Sebold, 1992). Nutritional value data produced by laboratory testing suggests that saltmeadow cordgrass provides nutritional requirements of sufficient levels to meet maintenance requirements of small grazing ruminants (Tawfik, Tawfik, Elhamid, Gobarah, & Hassanein, 2014). Laboratory tests have reported crude protein values from 11.03-13.5%, fiber (acid detergent) from 24.36-39.8%, total digestible nutrients from 57.2-58.3%, and net energy from 0.32-0.34% (Tawfik et al., 2014; Snell, 2024).

### **Ethnobotany**

Saltmeadow cordgrass, in addition to saltmeadow rush (*Juncus gerardii*) and saltgrass (*Distichlis spicata*), is a primary component of salt marsh hay (Sebold, 1992). Salt marsh hay is a versatile agricultural product that was utilized for a wide array of cultural and historic applications. Historic salt hay applications and uses that have fallen out of practice in modern times include bedding for horses and cattle, livestock feed, thatch roofs, biodegradable packing material to ship fragile items, as a component to produce paper and textiles such as butcher paper, insulation in icehouses, increased traction on roads, protecting and curing concrete, and production of salt-hay rope (Mathis, 1975; Sebold, 1992). Salt hay applications and uses that are still commonly practiced or have been developed and adopted more recently include weed free mulch for nursery and vegetable production and livestock feed specifically for pre salted meats (Mathis, 1975; Sebold, 1992; Morgan, 2024).

### **Status**

**Threatened or Endangered:** Saltmeadow cordgrass is not federally listed and has a global rank of “G5” or “Secure.” By more specific regions, it is ranked as “S5”, “S4”, “S3”, or “S2” meaning that it is not legally protected but ranges from “Secure” to “Apparently Secure” to “Vulnerable” to “Imperiled” respectively. In Canada it is ranked as “S4” for Prince Edward Island, “S3” in Québec, and “S2” in Newfoundland. In the US it is ranked “S4” in Florida. It is ranked as “S5” in all other US states and Canadian provinces where it occurs and is assigned a status rank (Natureserve, 2025).

**Wetland Indicator:** Obligate (OBL) wetland plant in the Arid West and Western Mountains region and the Valleys and Coast region. Facultative Wetland (FACW) for Atlantic and Gulf Coastal Plain, Caribbean, Eastern Mountains and Piedmont, Great Plains, Midwest, and Northcentral and Northeast regions (USACE, 2020).

**Weedy or Invasive:** This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Saltmeadow cordgrass is listed in California, Oregon, and Washington (CIPC, 2020; Kratville, 2021; WSNWCB, 2020; ODA, 2020).

This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, state natural resource, or state agriculture department regarding its status and use.

Please consult the PLANTS Web site (<http://plants.usda.gov/>) and your state's Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

### **Planting Guidelines**

Saltmeadow cordgrass is usually established by vegetative means between 1 February and 1 July (USDA-NRCS, 1996; Broome, 2015; Wootton et al., 2016; USDA-NRCS, 2023). Depending on the energy affecting the planting site, either containerized (high impact sites) or bare root (mild impact sites) plants can be utilized. Bare root material should contain three to five stems per planting unit, while containers should have at least five to eight healthy stems. Bare root plugs are generally limited to planting sites that are exposed to little or no wave energy. Since most marsh sites are irregular and difficult to access, hand planting is normally employed, using spades, dibbles, or planting bars. If planting site conditions are appropriate and in most nursery production establishment situations, planting can be carried out with a mechanical, tractor drawn transplanter. Plant spacing should be between 12-36 inches and adjusted based on conditions of the planting site and goals of the project; up to 2 feet of lateral spread can be expected annually (Craig, 1991; USDA-NRCS, 1996; USDA-NRCS, 2007). Plant propagules to a depth 2 inches below the nursery grown depth (Wootton et al., 2016).

### **Management**

Minimal maintenance is required for most coastal dune habitat plantings (Wootton et al., 2016). Restrict traffic from the planting area following establishment. Pedestrian and vehicular traffic can damage recently planted vegetation, contribute to increased wind erosion, and lead to soil compaction which can introduce a host of other conservation concerns (USDA-NRCS, 1996; Broome, 2015; Wootton et al., 2016). Fertilization is not always necessary but may promote more rapid establishment of vegetative plantings (Broome, 2015). Wootton et al. (2016) recommends an initial nitrogen broadcast application but cautions that fertilizer applications should be site appropriate and that overfertilization can degrade water quality due to leaching of excess nutrients. Alternative nutrient sources such as a slow-release fertilizer applied directly to the planting hole and organic options provide fertilization choices other than standard synthetic fertilizers for coastal dune sites (Wootton et al., 2016). For nursery production applications, contact your local agricultural extension for soil test analysis and fertilizer application recommendations prior to implementing a fertilization plan.

Variety selection is an important consideration for haying/grazing purposes. A 4-year saltmeadow cordgrass variety trial examining biomass production at the New Jersey Plant Materials Center (Cape May Court House, NJ) reported statistically significant differences between three saltmeadow cordgrass varieties ('Avalon', 'Flageo', and 'Sharp'). After one growing season, Avalon produced the least amount of biomass and Sharp the greatest amount. After two and three growing seasons, there was no significant difference in biomass production between Flageo and Sharp, and both produced a significantly greater amount of biomass than Avalon (Snell, 2024).

Saltmeadow cordgrass is not native to the Pacific coastal states of the US and is classified as an invasive noxious species by regulatory authorities in the region (WSNWCB, 2020; ODA, 2020; CIPC, 2020; Kratville, 2021). Successful control methods include nonchemical and chemical options. Nonchemical means of control include mechanical and cultural methods such as pulling, cutting, disking, and solarization (DiTomaso et al., 2013).

### **Pests and Potential Problems**

Toxic ascomycete ergot parasitizes the ovaries of saltmeadow cordgrass. The infection can be transferred to other grass species including big cordgrass (*Spartina cynosuroides*) and smooth cordgrass (*Spartina alterniflora*) (Eleuterius & Meyers, 1974).

### **Environmental Concerns**

Saltmeadow cordgrass is a native species widely used along the US Gulf and Atlantic coasts for barrier island and wetland restoration due to its ecosystem benefits (USDA-NRCS, 2012; Watson et al., 2016; USDA-NRCS, 2023). However, it was introduced into areas on the Pacific coast where it is an aggressive invasive species. Saltmeadow cordgrass is classified as a

“Class A Weed” by the Washington State Noxious Weed Control Board (WSNWC, 2020). Saltmeadow cordgrass is classified as an “A Listed” and “T-Designated” weed by the Oregon Department of Agriculture (ODA, 2020). The California Invasive Plant Council and the California Department of Food and Agriculture designated saltmeadow cordgrass as an invasive noxious weed (CIPC, 2020; Kratville, 2021).

### Control

Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method.

### Seeds and Plant Production

Saltmeadow cordgrass is commonly propagated vegetatively as it rarely spreads through seed production and seedlings have low vigor. Plant saltmeadow cordgrass 6-12 inches apart in nursery rows. Under ideal nursery conditions, each planting unit may yield up to 50 stems in a single growing season. However, plants may require two growing seasons prior to reaching adequate size for harvest (USDA-NRCS, 2023). Field harvested material can be divided into three to five stem planting units to produce containerized stock for greenhouse production. Containerized plants produced in this manner will typically require 6 months of growing time following division to attain an acceptable size for conservation plantings and to be considered commercially marketable (USDA-NRCS, 2023). Effective weed control is essential to producing quality plants. Prescribed burns and chemical applications have both been utilized as weed control options (USDA-NRCS, 2012; USDA-NRCS, 2023).

### Cultivars, Improved, and Selected Materials (and area of origin)

Saltmeadow cordgrass is easily found in nurseries, garden stores and other plant dealers and distributors. There are several named cultivars available on the commercial market. In 1986, Avalon (New Jersey) saltmeadow cordgrass was released for use in the coastal area north of the Carolinas by the Cape May Plant Materials Center (PMC), Cape May Court House, New Jersey (USDA-NRCS, 2014). Soon after, Flageo (North Carolina) was released by the Americus, Georgia and Brooksville, Florida PMCs for use on southern Atlantic and Gulf coasts (USDA-NRCS, 2012). Sharp (Louisiana) was released in 1994 by the Florida and Georgia PMCs for coastal back dune stabilization in the southern Atlantic and Gulf coast counties from Florida to Texas. It is also suited for use in inland areas from southern Georgia to southern Arkansas to stabilize shorelines, gullies, road banks, mine spoils, saline oil seep areas, and for nutrient reclamation in agricultural and municipal wastewater irrigated fields (USDA-NRCS, 2023). In 2003, ‘Gulf Coast’ (Louisiana) was released from the Golden Meadow PMC near Galliano, Louisiana for marsh restoration, shoreline and levee stabilization, stabilizing dredge fill sites, and restoration of coastal beaches and dunes. Gulf Coast is reported to be well adapted to coastal areas of Louisiana, Mississippi, and Texas (USDA-NRCS, 2018).

Cultivars should be selected based on the local climate, resistance to local pests, and intended use. Consult with your local land grant university, local extension or local USDA NRCS office for recommendations on adapted cultivars for use in your area.

### Literature Cited

- Abuzeineh, A.A., R.D. Owen, N.E. McIntyre, C.W. Dick, R.E. Strauss, and T. Holsomback. 2007. Response of marsh rice rat (*Oryzomys palustris*) to inundation of habitat. *Southw. Naturalist* 52(1): 75-78.
- Barkworth, M.E. 2003. *Spartina* Schreb. In: Barkworth, M.E., K.M. Capels, S. Long, and M.B. Piep eds. *Magnoliophyta: Commelinidae (in Part): Poaceae, Part 2, Flora of North America North of Mexico, Volume 25*. New York: Oxford University Press. 240-250.
- Broome, S. 2015. Restoration and Management of Coastal Dune Vegetation [Online]. Available at <https://content.ces.ncsu.edu/restoration-and-management-of-coastal-dune-vegetation> (accessed 6 Feb. 2025). NC State Extension, Raleigh, NC
- Burger, J. and J. Shisler. 1983. Succession and productivity on perturbed and natural *Spartina* salt-marsh areas in New Jersey. *Estuaries* 6(1): 50-56.
- CIPC (California Invasive Plant Council). 2020. CAL IPC *Spartina patens* [Online]. Available at <https://www.cal-ipc.org/plants/profile/spartina-patens-profile/> (accessed 7 Jan. 2025). California Invasive Plant Council, Berkeley, CA.
- Courtemanche Jr, R.P., M.W. Hester, and I.A. Mendelssohn. 1999. Recovery of a Louisiana marsh plant community following extensive hurricane-induced overwash. *J. Coast. Res.* 15(4): 872-883.
- Craig, R.M. 1991. Plants for coastal dunes of the Gulf and South Atlantic Coasts and Puerto Rico, Agriculture Information Bulletin 460. USDA-Soil Conservation Service, Washington, D.C.
- DeLaune, R.D., S.R. Pezeshki, A. Jugsujinda, and C.W. Lindau. 2003. Sensitivity of US Gulf of Mexico coastal marsh vegetation to crude oil: comparison of greenhouse and field responses. *Aquat. Ecol.* 37(4): 351-360.

- DiTomaso, J.M., G.B. Kyser, S.R. Oneto, R.G. Wilson, S.B. Orloff, L.W. Anderson, ... J.J. Mann. 2013. Weed control in natural areas in the Western United States. University of California Weed Research and Information Center, Davis, CA.
- Eleuterius, L.N. and S.P. Meyers. 1974. *Claviceps purpurea* on *Spartina* in coastal marshes. Mycologia 66(6): 978-986.
- Gould, F.W. 1975. The Grasses of Texas. Texas A&M University Press. College Station, Texas.
- Gjerdrum, C., C.S. Elphick, and M. Rubega. 2005. Nest site selection and nesting success in saltmarsh breeding sparrows: the importance of next habitat, timing, and study site differences. The Condor 107: 849-862.
- Hartley, M.J. and A.J. Weldon. 2020. Saltmarsh sparrow conservation plan. Atlantic Coast Joint Venture, Hadley, MA.
- Hester, M.W., I.A. Mendelssohn, and K.L. McKee. 1996. Intraspecific variation in salt tolerance and morphology in the coastal grass *spartina patens* (poaceae). Am. J. Bot. 83(12): 1521-1527.
- Kratville, D. 2021. Encycloweed: Data Sheets California Noxious Weeds [Online]. Available at [https://www.cdfa.ca.gov/plant/ipc/encycloweed/weedinfo/winfo\\_table-sciname.html](https://www.cdfa.ca.gov/plant/ipc/encycloweed/weedinfo/winfo_table-sciname.html) (accessed 7 Jan. 2025). California Department of Food and Agriculture, Sacramento, CA.
- Martin, W.E. 1959. The vegetation of Island Beach State Park. Ecol. Monogr. 29(1): 2-46.
- Mathis, C.V. 1975. Salt-Hay Farming Dying Out [Online]. Available at <https://www.nytimes.com/1975/10/12/archives/new-jersey-pages-salthay-farming-dying-out.html> (accessed 2 Mar. 2020). The New York Times: 117.
- Morgan, K. 2024. Salting the Earth [Online]. Available at <https://ambrook.com/research/sustainability/salt-hay-climate-adaptation> (accessed 30 Apr. 2025). Ambrook Research, New York, NY.
- Natureserve. 2025. NatureServe Network Biodiversity Location Data accessed through NatureServe Explorer [Online]. Available <https://explorer.natureserve.org/> (accessed 16 Jan. 2025). NatureServe, Arlington, VA.
- ODA (Oregon Department of Agriculture). 2020. Noxious Weed Policy and Classification System [Online]. Available at <https://www.oregon.gov/oda/weeds/oregon-noxious-weeds/Pages/default.aspx> (accessed 7 Jan. 2025). Oregon Department of Agriculture, Noxious Weed Control Program, Salem, OR.
- Oosting, H.J. 1945. Tolerance to salt spray of plants of coastal dunes. Ecol. 26(1): 85-89.
- Pratt-Phillips, S.E., S. Stuska, H.L. Beveridge, and M. Yoder. 2011. Nutritional quality of forages consumed by feral horses: The horses of Shackleford Banks. J. Equine Vet. Sci. 31: 640-644.
- Roberts, S.G., R.A. Longenecker, M.A. Etterson, K.J. Ruskin, C.S. Elphick, B.J. Olsen, and W.G. Shriver. 2017. Factors that influence vital rates of seaside and saltmarsh sparrows in coastal New Jersey, USA. J. Field Ornithol. 88(2): 115-131.
- Sauer, J. 1967. Geographic reconnaissance of seashore vegetation along the Mexican Gulf Coast. Louisiana State University Press, Baton Rouge, LA.
- Sebold, K.R. 1992. From marsh to farm: The landscape transformation of coastal New Jersey. Historic American Buildings Survey / Historic American Engineering Record. U.S. Department of the Interior, National Park Service, Washington DC.
- Sei, M. 2009. Flight and oviposition behavior of the adult maritime ringlet (*Coenonympha nipisiquit* McDunnough) females in response to microhabitat. J. Insect Behav. 22(2): 87-100.
- Snell, S.C. 2024. Evaluation of Saltmeadow Cordgrass (*Spartina patens*) Varieties for Biomass Production in the Mid-Atlantic Coastal Region. USDA-Natural Resources Conservation Service, Cape May Plant Materials Center. Cape May, NJ.
- Stallins, J. A. 2002. Dune plant species diversity and function in two barrier island biogeomorphic systems. Plant Ecol. 165: 183-196.
- Stalter, R. 1974. Vegetation in coastal dunes in South Carolina. Castanea 39(1): 95-103.
- Stalter, R. 1992. Barrier island botany. Wm. C. Brown Publishers, Dubuque, IA.
- Stalter, R. 1993. Barrier island botany. The Southeastern United States. Wm. C. Brown Publishers, Dubuque, IA.
- Stalter, R. 2003. Barrier island botany – A Guide to Barrier Island Plants from Cape Cod, Massachusetts to Assateague Island, Virginia. Eastern National, Fort Washington, PA.
- Stalter, R. and E.E. Lamont. 1997. Flora of North Carolina's Outer Banks, Ocracoke Island to Virginia. J. Torrey Bot. Soc. 124(1): 71-88.
- Stutzenbaker, D.D. 1999. Aquatic and Wetland Plants in the Western Gulf Coast. University of Texas Press, Austin, TX.
- Tawfik, M.M., M.M. Tawfik, E.M. Elhamid, M.E. Gobarah, & M.M. Hassanein. 2014. Testing of some halophytic plants for forage, biofuel production and soil bioremediation. J. Environ. Treat. Tech. 1(4): 183-189.
- USACE (US Army Corps of Engineers). 2020. National Wetland Plant List v3.5 – Species Detail Tool [Online]. Available at [https://cwbi-app.sec.usace.army.mil/nwpl\\_static/v34/home/home.html](https://cwbi-app.sec.usace.army.mil/nwpl_static/v34/home/home.html) (accessed 16 Jan. 2025). USDOD-Army Corps of Engineers, Washington, DC.
- USDA-NRCS. 1996. Planting guide *Spartina patens* saltmeadow cordgrass. USDA-Natural Resources Conservation Service, Brooksville Plant Materials Center, Brooksville, FL.
- USDA-NRCS. 2007. Planting Guide for Establishing Coastal Vegetation on the Mississippi Gulf Coast. USDA-Natural Resources Conservation Service, Jamie L. Whitten Plant Materials Center, Coffeeville, MS.

USDA-NRCS. 2012. Release brochure for 'Flageo' marshhay cordgrass (*Spartina patens*). USDA-Natural Resources Conservation Service, Jimmy Carter Plant Materials Center, Americus, GA.

USDA-NRCS. 2014. Release brochure for 'Avalon' saltmeadow cordgrass (*Spartina patens*). USDA-Natural Resources Conservation Service, Cape May Plant Materials Center, Cape May Court House, NJ.

USDA-NRCS. 2018. Release brochure for 'Gulf Coast' marshhay cordgrass [*Spartina patens* (Ait.) Muhl.]. USDA-Natural Resources Conservation Service, Golden Meadow Plant Materials Center, Galliano, LA.

USDA-NRCS. 2019. Plant Materials Evaluation Procedures. USDA-Natural Resources Conservation Service, Plant Materials Program. Washington, DC.

USDA-NRCS. 2021. The PLANTS database [Online]. Available at <http://plants.usda.gov>, (accessed 6 Feb. 2025). National Plant Data Team, Greensboro, NC.

USDA-NRCS. 2023. Release brochure for 'Sharp' Saltmeadow Cordgrass (*Spartina patens*). USDA-Natural Resources Conservation Service, Brooksville Plant Materials Center, Brooksville, FL.

USFWS (U.S. Fish and Wildlife Service). 2021. Birds of conservation concern. USDOI-U.S. Fish and Wildlife Service, Migratory Birds, Falls Church, VA.

van der Valk, A.G. 1975. The floristic composition and structure of foredune plant communities of Cape Hatteras National Seashore. *Chesapeake Sci.* 16(2): 115-126.

Voss, E.G. 1972. Michigan Flora – A guide to the identification and occurrence of native and naturalized seed-plants of the state. Cranbrook Institute of Science and University of Michigan Herbarium, Bloomfield Hills, MI.

Wang, J., D.M. Seliskar, J.L. Gallagher, and M.T. League. 2006. Blocking *Phragmites australis* reinvasion of restored marshes using plants selected from wild populations and tissue culture. *Wetl. Ecol. Manag.* 14(6): 539-547.

Watson, E.B., K. Szura, C. Wigand, K.B. Raposa, K. Blount, M. Cencer. 2016. Sea level rise, drought and the decline of *Spartina patens* in New England marshes. *Biol. Restor.* 196: 173-181.

Wootton, L., J. Miller, C. Miller, M. Peek, A. Williams, and P. Rowe. 2016. Dune Manual. New Jersey Sea Grant Consortium, Highlands, NJ.

WSNWC (Washington State Noxious Weed Control Board). 2020. Washington State Noxious Weed List. Washington State Department of Agriculture, Yakima, WA.

## Citation

Leif, J. and S.C. Snell. 2025. Plant Guide for saltmeadow cordgrass (*Spartina patens*). USDA-Natural Resources Conservation Service, Cape May Plant Materials Center, Cape May, NJ.

Published March 2013

Edited: 08May2025 scott snell

For more information about this and other plants, please contact your local NRCS field office or Conservation District at <http://www.nrcs.usda.gov/> and visit the PLANTS Web site at <http://plants.usda.gov/> or the Plant Materials Program web site: <http://plant-materials.nrcs.usda.gov>.

PLANTS is not responsible for the content or availability of other Web sites.

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the State or local Agency that administers the program or contact USDA through the Telecommunications Relay Service at 711 (voice and TTY). Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Mail Stop 9410, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: [program.intake@usda.gov](mailto:program.intake@usda.gov).

USDA is an equal opportunity provider, employer, and lender.