

Phragmites

Phragmites outcompetes native vegetation and lowers the local plant biodiversity. *Phragmites* forms dense thickets of vegetation that is unsuitable habitat for native fauna. *Phragmites* displaces native plants species such



as wild rice, cattails, and native wetland orchids.^[6] *Phragmites* has a high above ground biomass that blocks light to other plants allowing areas to turn into *Phragmites* monoculture very quickly. Decomposing *Phragmites* increases the rate of marsh accretion more rapidly than would occur with native marsh vegetation.^[7]

Phragmites australis subsp. *australis* is causing serious problems for many other North American hydrophyte wetland plants, including the native *Phragmites australis* subsp. *americanus*. Gallic acid released by *Phragmites* is degraded by ultraviolet light to produce mesoxalic acid, effectively hitting susceptible plants and seedlings with two harmful toxins.^{[8][9]} *Phragmites* is so difficult to control that one of the most effective methods of eradicating the plant is to burn it over 2-3 seasons. The roots grow so deep and strong that one burn is not enough.^[10] Ongoing research suggests that goats could be effectively used to control the species.^[11]

The leaves are long for a grass, 20–50 centimetres (7.9–19.7 in) and 2–3 centimetres (0.79–1.18 in) broad. The flowers are produced in late summer in a dense, dark purple panicle, about 20–50 cm long. Later the numerous long, narrow, sharp pointed spikelets appear greyer due to the growth of long, silky hairs.

It is a helophyte, especially common in alkaline habitats, and it also tolerates brackish water,^[8] and so is often found at the upper edges of estuaries and on other wetlands (such as grazing marsh) which are occasionally inundated by the sea. *Phragmites australis* has similar greenhouse gas emissions to native *Spartina alterniflora*.^[13]