参考译文：

米草属植物

Spartina alterniflora, known as cordgrass, is a deciduous, perennial flowering plant native to the Atlantic coast and the Gulf Coast of the United States. It is the dominant native species of the lower salt marshes along these coasts, where it grows in the intertidal zone (the area covered by water some parts of the day and exposed others).

互花米草，俗称网茅，是一种冬季枯萎的多年生开花植物，原产自大西洋沿岸和

美国的墨西哥湾。它是这些海岸地区低海拔盐碱地的优势本地种，生长于潮汐带

（有时淹没在水中，有时暴露在空气中的区域）。

These natural salt marshes are among the most productive habitats in the marine environment. Nutrient-rich water is brought to the wetlands during each high tide, making a high rate of food production possible. As the seaweed and marsh grass leaves die, bacteria break down the plant material, and insects, small shrimplike organisms, fiddler crabs, and marsh snails eat the decaying plant tissue, digest it, and excrete wastes high in nutrients. Numerous insects occupy the marsh, feeding on living or dead cordgrass tissue, and redwing blackbirds, sparrows, rodents, rabbits, and deer feed directly on the cordgrass. Each tidal cycle carries plant material into the offshore water to be used by the subtidal organisms.

这些天然的盐碱地位于海洋环境下最肥沃的生境中。涨潮时会给沼泽带来营养丰富的海水，使得食物有可能获得高产。随着海草和沼泽禾草叶子的死亡，细菌将植物体分解，昆虫、小型虾状浮游生物、招潮蟹和沼泽蜗牛吃掉了腐烂的植物组织，消化后排出富含营养的排泄物。沼泽里生活着无数的昆虫，它们以活着或死去的网茅组织为食，红翼歌鸫、麻雀、啮齿动物、兔子以及鹿都直接食用网茅。每一个潮汐周期都会将植物带到近海海水中，它们可以被潮水下的生物所利用。

Spartina is an exceedingly competitive plant. It spreads primarily by underground stems; colonies form when pieces of the root system or whole plants float into an area and take root or when seeds float into a suitable area and germinate. Spartina establishes itself on substrates ranging from sand and silt to gravel and cobble and is tolerant of salinities ranging from that of near freshwater (0.05 percent) to that of salt water (3.5 percent). Because they lack oxygen, marsh sediments are high in sulfides that are toxic to most plants. Spartina has the ability to take up sulfides and convert them to sulfate, a form of sulfur that the plant can use; this ability makes it easier for the grass to colonize marsh environments. Another adaptive advantage is Spartina’s ability to use carbon dioxide more efficiently than most other plants.

米草属植物是极具竞争力的植物。它主要通过地下茎向四周扩展，当根系或整株植物漂到一个区域并扎下根来，或者当种子漂到一个适合的地方并发芽，就会形成新的群落。从泥沙地到卵砾石地，米草属植物都能生长，其耐盐度从接近淡水（0.05%）到盐水 （3.5%）。由于沼泽沉积物里缺乏氧气，因而含有很多的硫化物，对多数植物而言是有毒的。米草属植物具有能够吸收硫化物并将其转换成为硫酸盐——一种植物可以利用的硫形式的能力。这种能力使得米草属植物能够在沼泽环境中生存。另一个适应性优势就是米草属植物比其它植物能更为有效的利用二氧化碳的能力。

These characteristics make Spartina a valuable component of the estuaries where it occurs naturally. The plant functions as a stabilizer and a sediment trap and as a nursery area for estuarine fish and shellfish. Once established, a stand of Spartina begins to trap sediment, changing the substrate elevation, and eventually the stand evolves into a high marsh system where Spartina is gradually displaced by higher-elevation, brackish-water species. As elevation increases, narrow, deep channels of water form throughout the marsh. Along the east coast Spartina is considered valuable for its ability to prevent erosion and marshland deterioration; it is also used for coastal restoration projects and the creation of new wetland sites.

这些特征使得在河口处自然生长出的米草属植物成为了该地重要的组成部分。植物起到了稳定器和沉积物收集器的作用，而且还充当了河口鱼类和贝类的哺育场所。一旦落地生根，一片米草属植物就开始截留沉积物，改变基质的海拔高度，最终这片米草属植物会逐渐被更高海拔的微咸淡水植物所取代，发展成了一个高海拔的沼泽系统。随着高海拔沼泽的升高，沼泽中会遍布狭窄深凹的水道。在东海岸，人们认为米属草非常有用，因为它有防止侵蚀和防止沼泽退化的能力，而且它还被用于海岸恢复计划和构筑新的湿地。

Spartina was transported to Washington State in packing materials for oysters transplanted from the east coast in 1894. Leaving its insect predators behind, the cordgrass has been spreading slowly and steadily along Washington’s tidal estuaries on the west coast, crowding out the native plants and drastically altering the landscape by trapping sediment. Spartina modifies tidal mudflats, turning them into high marshes inhospitable to the many fish and waterfowl that depend on the mudflats. It is already hampering the oyster harvest and the Dungeness crab fishery, and it interferes with the recreational use of beaches and waterfronts. Spartina has been transplanted to England and to New Zealand for land reclamation and shoreline stabilization. In New Zealand the plant has spread rapidly, changing mudflats with marshy fringes to extensive salt meadows and reducing the number and kinds of birds and animals that use the marsh.

1894 年，为了将牡蛎从东海岸转移到华盛顿州，米草属植物被打包运往华盛顿州。由于缺少捕食性昆虫，网茅沿着西海岸华盛顿州的潮汐河口缓慢而稳定地传播开来，排挤本地植物，并通过截留沉积物极大地改变了当地的景观。米草属植物改造了沿海滩涂，将它们转变成不适合很多依赖于滩涂的鱼类和水禽生活的高海拔沼泽。米草属植物已经妨碍了牡蛎的打捞以及珍宝蟹的养殖，它干扰了海滩和海滨的休憩用途。人们将米草属植物移栽到英国和新西兰用于改良土地以及稳定海岸线。在新西兰，米草属植物扩散得很快，它改变了沼泽，将沼泽地的边缘变成了广阔的盐渍草地，并减少了在沼泽生活的鸟类和动物的数量。

Efforts to control Spartina outside its natural environment have included burning, flooding, shading plants with black canvas or plastic, smothering the plants with dredged materials or clay, applying herbicide, and mowing repeatedly. Little success has been reported in New Zealand and England; Washington State’s management program has tried many of these methods and is presently using the herbicide glyphosphate to control its spread. Work has begun to determine the feasibility of using insects as biological controls, but effective biological controls are considered years away. Even with a massive effort, it is doubtful that complete eradication of Spartina from nonnative habitats is possible, for it has become an integral part of these shorelines and estuaries during the last 100 to 200 years.

为了在米草属植物自然生境以外控制它的扩散，人们尝试了焚烧、水淹、用黑色的帆布或塑料布遮挡阳光、用疏浚物料或者粘土使其窒息、喷撒除草剂以及反复割草的方法。在新西兰和英国只取得了微不足道的成效，华盛顿州的管理项目尝试了很多此类方法，目前正在使用除草剂草甘膦控制它的传播。已经开展了相关工作确定用昆虫进行生物防止的有效性，但是真正能够采取有效的生物防治还需要很多年。即使是付出巨大的努力，我们仍然怀疑完全从非原生境中根除米草属植物的可能性，因为在过去的 100 到 200 年间，它已经成为了这些海岸线地带和河口的主要组成部分。