



US ARMY CORPS OF ENGINEERS

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| Common Name | grass kelp |
| Genus & Species | <i>Enteromorpha flexuosa</i> |
| Family | Ulvaceae |
| Order | Ulvaes |
| Class | Ulvophyceae |

Diagnosis: Grass kelp is known to be yellow to light green in color with smooth, hollow thalli that are threadlike in shape. Each thalli is able to attach to substrate with the help of disc-shaped, root like structures called holdfasts. Within the Great Lakes there are two subspecies present, *E. flexuosa flexuosa* which displays an un-branched form and *E. flexuosa paradoxa* which displays a branched form. The branched form of *paradoxa* is generally found to be much thinner with an average diameter of less than .16 μm , while *flexuosa* diameters average about 3.6 mm.

Ecology: Species of the genus *Enteromorpha* are able to reproduce sexually but proliferate at a much higher rate asexually through zoospore production and fragmentation. Although the zoospores are intolerant of a low salinity environment, fragmentation has allowed this marine species to adapt to the freshwater ecosystem of the Great Lakes. It is through fragmentation that large, bio-fouling blooms develop which are magnified in areas with high nutrient concentrations. Large mats of this green alga have been reported to block sunlight and crowd out macrophytes in its native range and there are concerns that sustained blooms in the Great Lakes would have similar effects that would lead to disruption of the food web.

Habitat & Distribution: This green algae species can be found worldwide, mainly residing in a marine environment but has also invaded freshwater habitats. It is tolerant to a broad range of temperatures and salinities (.5-35ppm) and has been recorded from man-made waterways to tidal pools, growing on rocks and macrophytes and in free floating in dense green tides. In the Great Lakes basin, it is reported from Lake Muskegon's littoral zone growing on submerged macrophytes.

Status: Since its first observation in 2003, it has been recorded from two other lakes within the same drainage as Lake Muskegon into Lake Michigan. Growth rate and dispersal rates are believed to be directly linked to increased nutrient load and salinity. *E. flexuosa* can be spread through aquatic hitchhiking on boat hulls and trailers and zoospores are capable of survival and transport via ballast water.

USGS Fact Sheet: <http://nas.er.usgs.gov/queries/factsheet.aspx?speciesid=2726>

