Assessing the impact of the invasive Asiatic sand sedge, *Carex kobomugi*, on coastal dune communities in New Jersey - R/6847-0001

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Research Summary

The combined economic and environmental costs of invasive species are estimated to exceed $137 billion per year in the US alone. As a result, invasive species are generally listed as one of the most important environmental threats of the 21st century. One such invasive species is the sedge, *Carex kobomugi*, which was accidentally introduced to North America from Asia about a century ago. In the 1960s and 70s it was propagated and deliberately planted as a dune stabilizer, but increased awareness of the problems caused by invasive species halted this practice in the early 1980s. However, *Carex kobomugi* is still spreading via natural propagation, creating problems for coastal managers from Rhode Island to the Carolinas. The problems are particularly acute in New Jersey where the species is expanding exponentially along the State's vital coastal dune systems. This expansion is significantly reducing the diversity and abundance of native species in affected areas. The species' expansion also threatens a number of endangered species such as piping plovers, sea-beach amaranth and tiger beach beetles. In

Carex kobomugi

(Over)

***Carex kobomugi*, female**

addition, *Carex kobomugi* negatively impacts seaside goldenrod, the nectar of which is an important food resource for migrating monarch butterflies. This sedge is also believed to change the size and shape of the dunes that it invades in ways which reduce the dunes' effectiveness in preventing flooding during storm surges. In order to guide the State's management effort for this species, we will look for patterns in spread rate and direction of *Carex kobomugi* in New Jersey. We will also look at the effects of this plant's invasion on the animals inhabiting the dunes, and on dune shape and height. Finally, we will sponsor a workshop to review strategies currently being used to manage this and other invasive species in coastal dune and maritime forest habitats on the US Eastern Seaboard.