Addressing the Invasive Potential of Bioenergy Feedstocks in the Southeast United States

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Abstract: Every year, invasive species cost the United States billions of dollars and affect countless acres of native ecosystems. The southeast in particular has been dramatically affected by invasions of such species as kudzu. The recent rapid expansion of biofuels and bioenergy production, combined with the diversification of potential bioenergy crops, has generated considerable interest in the use of non-native and genetically modified biomass feedstocks that have the potential to become ecologically-damaging invasives. Examples of potentially invasive plants that are currently being cultivated as bioenergy feedstocks in test plots and/or commercial-scale plots in the southeastern United States include giant reed (*Arundo donax*), napier grass (*Pennisetum purpureum*), and seeded giant miscanthus (*Miscanthus* × *giganteus*). Very little is known about the full potential scope of the problem, yet the industry is moving full speed ahead, often without safeguards. Should these bioenergy feedstocks escape and become established in nearby natural areas, the results could be potentially devastating for native ecosystems. Despite the threat, the issue has received remarkably little attention, particularly among policymakers and federal agencies that are actively promoting bioenergy production. Moreover, few safeguards exist in law to prevent the spread of invasive species through bioenergy cultivation. Policy recommendations that could minimize or mitigate this risk include prohibiting the use of known invasive species as dedicated bioenergy feedstocks, assigning liability to feedstock producers for damages, and promoting the use of ecologically beneficial biomass feedstocks such as native plants and sustainably collected forest residues. More research is needed to better understanding and mitigating the risks of harmful invasions from bioenergy feedstocks. Rigorous screening protocols and use of the precautionary principle should be integrated as a key component of future efforts to expand bioenergy.

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