Biofuels and Invasive Plant Species

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A variety of plant species from a range of taxa, including crops and wild plants, are being considered for use as biofuels. It is important to consider not only the economic and social benefits of these species, but the potential risks associated with their introduction and propagation.

Biofuel crops can have economic benefits, but in some cases can also have the potential to escape cultivation and become invasive in natural ecosystems. For example, of the many grasses being evaluated or considered as biofuels, most are rhizomatous perennials and a few have already been shown to be extremely invasive in many communities (e.g., giant reed [*Arundo donax*] and reed canarygrass [*Phalaris arundinacea*]). Similarly, woody species under consideration, such as Chinese tallowtree (*Sapium sebiferum*), are also very invasive in many southern states. These species threaten riparian areas and wetlands, alter fire cycles, and have a negative impact on wildlife habitat.

Ideally, plants used as an economically efficient source of biofuel should be easily propagated in highly managed agricultural systems, but should not be capable of surviving outside of such cultivation. This is true for nearly all of the major crops currently grown in the US, including rice, wheat, corn, soybean, cotton, tomato and alfalfa. Similar expectations should apply to biofuel crops. Without this expectation, the benefits of crop-based biofuel production may be offset by far greater economic and ecological damage caused by their invasion into sensitive natural ecosystems, as well as drainage and irrigation canals.

Although introducing some plant species as biofuel sources may be safe and beneficial to society, the environmental and ecological risks associated with their potential escape and invasion into natural systems must be evaluated along with the agronomic or economic benefits. Similar evaluations and analyses are already mandatory for biological control agents and transgenic plants, and should be in place before decisions are made regarding the use of biofuel plants.

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