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Managing Invasive Aquatic Plants in a Changing System: Strategic Consideration of Ecosystem Services

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climate change; ecosystem services; exotic species; *Hydrilla*; invasive aquatic plants; *Phragmites*

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Abstract: *Climate change is projected to increase stress for many coastal plant communities. Along large portions of the North American coast, habitat degradation from anthropogenic changes to the environment already threaten the community structure of tidal marshes and submerged aquatic grass beds. The potential loss of ecological services historically provided by these communities has been a long-standing rationale for aggressive control of invading plants such as *Phragmites australis* and *Hydrilla verticillata*. Increasing evidence of ecological services provided by invasive species such as *P. australis* and *H. verticillata* suggest that, in the face of increasing stress, it may be prudent to take a more pragmatic approach regarding the effect of these species on coastal ecosystems. The notable resilience of these species to control efforts and their competitive success and comparative vigor in stressed systems and capacity to provide at least some beneficial services combine to suggest some invasive species may have a useful role in managed coastal ecosystems.*

Resumen: *Se considera que el cambio climático incrementará el estrés para muchas comunidades de plantas costeras. A lo largo de grandes porciones de la costa norteamericana, la degradación del hábitat por cambios antropogénicos al ambiente ya es una amenaza para la estructura de la comunidad de marismas y de lechos de pasto acuático sumergido. La pérdida potencial de los servicios ecológicos proporcionados históricamente por estas comunidades por mucho tiempo ha sido la base lógica para el control agresivo de plantas invasoras como *Phragmites australis* e *Hydrilla verticillata*. El incremento de evidencia de los servicios ecológicos proporcionados por especies invasoras como *P.* e *H. verticillata* sugieren que, a la luz del incremento de estrés, puede ser prudente adoptar un enfoque más pragmático en relación con el efecto de estas especies sobre los ecosistemas costeros. La resiliencia notable de estas*

especies a los esfuerzos de control y su éxito competitivo y vigor comparativo en sistemas estresados y si capacidad para proporcionar por lo menos algunos servicios benéficos se combinan para sugerir que algunas especies invasoras pueden jugar un papel útil en ecosistemas costeros.

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