New Method Assesses Impact of Invasive Plants on Native Ecosystems

Arlington, Virginia ─ Which non-native species pose the most serious threats to native species and ecosystems? NatureServe, in collaboration with The Nature Conservancy, has developed a new scientific method to help answer this question. The method is published in a NatureServe report released today, *An Invasive Species Assessment Protocol: Evaluating Non-Native Plants for Their Impact on Biodiversity*.

"Nearly everywhere we look, natural places are being degraded by invasive non-native plants," said Larry E. Morse, Ph.D., NatureServe's North American Botanist and lead author of the report. "To control them, land managers will need to set priorities, recognizing that not all invasives can be eradicated everywhere. This protocol is the first systematic way to separate the worst of the invaders from the rest, so it's a big step forward for conservation."

Invasive species now constitute the second-leading threat to imperiled native species, behind only habitat destruction. They can affect native biodiversity in several ways, including outcompeting native species for food or habitat, changing the food web or physical environment, and preying directly on native species. Rare species with limited ranges, small numbers, and restricted habitat requirements are often particularly vulnerable, as are rare habitat types. As global trade and travel increase, the problem worsens, with invasive species able to establish themselves in places where they have no natural checks on their population. Among plants alone, at least 3,500 non-native species are now found outside of cultivation in the United States.

The new Invasive Species Assessment Protocol is a valuable tool for natural resource managers in government agencies and conservation groups. It provides a systematic, science-based way to evaluate the threat from non-native species, based on objective criteria, and with full documentation of sources—aspects missing from previous efforts. The protocol lays out a

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series of 20 related questions pertaining to four key issues: Ecological Impact, Current Distribution and Abundance, Trend in Distribution and Abundance, and Management Difficulty. Detailed instructions and examples are provided to guide any knowledgeable land manager through the impact assessment for a particular species. Sub-ranks for the four issues are combined to yield an overall Invasive Species Impact Rank (I-Rank) of High, Medium, Low, or Insignificant. These results summarize the impact of each species over large portions of its range—such as states, provinces, ecoregions, or nations—as opposed to localized impact such as in a single park.

NatureServe has recently begun to use the protocol to assess a sampling of more than 300 non-native plants. Results will help to focus scarce management resources on the very worst invaders. Examples of plants assessed as high impact include miconia *(Miconia calvescens)* and saltcedar *(Tamarix ramosissima)*. Giant salvinia *(Salvinia molesta)* and skunk vine *(Paederia foetida)* rank as medium impact. Periwinkle *(Vinca minor)* is assessed as low impact, while Chinese mustard *(Brassica juncea)* is an example of a plant causing insignificant impact.

The report and supporting data, including assessments for more than 300 other non-native plants, are available on the NatureServe website at www.natureserve.org/getData/plantData.jsp. Additional plants will be assessed as funding becomes available, and NatureServe plans to adapt the method for invasive animal species as well.

Development of the Invasive Species Assessment Protocol was made possible through charitable support from the Turner Foundation and the National Fish and Wildlife Foundation, with additional funding from the U.S. Air Force and the Federal Highway Administration. The protocol is authored by a team comprising Larry Morse, Nancy Benton, and Stephanie Lu of NatureServe, John Randall of The Nature Conservancy's Wildland Invasive Species Team, and Ron Hiebert of the National Park Service.

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