

In response to the Feb. 7, 2011 *All Things Considered* piece entitled – *A Growing Risk? Endangered Plants for Sale Online* by Nell Greenfieldboyce:

The Center for Plant Conservation's position is that we would urge restraint, and that science and conservation biology guide the process of conservation and restoration of imperiled plants, and not independent citizen action. While many are very concerned about the potential loss of species from current threats and the emerging impacts of climate change, the best way to help is to get engaged in projects that have been carefully designed and reviewed to ensure we do no harm. We should make the best use of our scarce resources and volunteer workforce.

It is important to consider adverse consequences and act appropriately. Moving plants outside their native habitats has potential ecological risks to be considered like invasiveness, changing soil microflora, etc., not to mention spreading disease. There are also potential genetic risks for the founding population and to any related species in the area that can lower the survival and fitness of both. In the story's example of stinking cedar (*Torreya taxifolia*), the main threat in the wild is a disease organism, and today there are few wild specimens uninfected. A primary concern for restorationists is to understand this threat, find a way to manage it, and to avoid any possibility of moving this disease organism into new areas.

After 20 years of attempting reintroductions, one thing the Center for Plant Conservation can say is that establishing new populations even in their current suitable habitat isn't easy, let alone the challenges of moving them into completely new plant communities. Aggressive invasive tendencies aside, for the majority of species, the task of successfully moving a species into a new habitat to which it has not naturally adapted has multiple challenges and a high risk.

There is a lot of active scientific research underway to increase our understanding of how to proceed successfully and responsibly. The question looms large about whether such a drastic action has been demonstrated to be needed for a species or not. Even when the need looks inevitable, it's often not clear when to act to preserve biodiversity in the best, most responsible way so we minimize risk and increase the chances for success. "Johnny Appleseed" plant movements are not considered responsible actions in the conservation-biology community or the regulatory community, and may violate state or federal laws and regulations for some species (depending on the Convention on International Trade in Endangered Species of Wild Fauna and Flora and Endangered Species Act regulations, for example).

While conservationists would not rule out the use of such techniques in the future rather than suffer a catastrophic loss of global biodiversity, such action merits a rigorous risk/benefit analysis and review of the potential for establishment in the new climatic regime (including extreme events experienced), and the overall habitat matrix. Consideration should be given to whether the most appropriate wild adapted source material (ecotype) is being used, and whether known supportive elements like root rhizobia, mycorrhizae, seed dispersers, pollination syndrome requirements, population sizes and demographics, etc., are in place. Introduction or reintroduction is a fascinating multi-disciplinary scientific undertaking that yields a lot of important information for the species, the community, and for advancing conservation techniques when done well and responsibly. It can be a waste and a danger when it isn't.

Perhaps more important in the interim is active seed banking and tissue banking, and developing baseline ecological understanding of these plants and their supporting communities so that we are prepared to respond appropriately as the need to do so becomes more clear, and our tools and techniques become more effective and reliable.

The mission of the Center for Plant Conservation is to conserve and restore the imperiled native plants of the United States to secure them from extinction. It is a nonprofit organization that works with 36 leading botanical institutions across the country to fulfill its mission. These institutions maintain the Center for Plant Conservation's National Collection of Endangered Plants. The collection contains plant material from more than 750 of America's most at-risk native plants, including *Torreya taxifolia*. This material is used for research purposes and restoration work to support returning these plants to their natural habitats in the future.

The Center's program is coordinated by their national office in St. Louis, Mo. and guided by a volunteer board of trustees and the experts of a science advisory council. By developing standards and protocols, conducting conservation programs in horticulture, research and restoration, and raising awareness, the Center for Plant Conservation's network is striving to save America's most imperiled plants from being lost forever. For additional information about the Center for Plant Conservation, visit the Web site at www.centerforplantconservation.org.