

***Rhody Native*[™], Pliny the Elder, and the Challenges of Stewarding Conservation Lands¹**

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We count it a success that the land conservation movement now adds a couple thousand acres of protected land annually in Rhode Island to the over 100,000 acres already under protection. As conserved acreage grows, obviously the burden of land stewardship grows with it. But today there are extraordinary challenges for conservation land management, such as climate change and invasive species, which complicate stewardship and amplify the cost. Meeting these modern stewardship challenges will depend on innovative approaches, more investment, and environmentalists working cooperatively with other constituencies. This last element, cooperative effort, is an important goal of the *Rhody Native*[™] initiative, a project of the Rhode Island Natural History Survey in partnership with the Rhode Island Wild Plant Society, Rhode Island Nursery and Landscape Association, the URI Master Gardeners, URI Outreach Center, and Rhode Island Department of Environmental Management, among others.

The fundamental goal of *Rhody Native*[™] is to increase the availability and use of native plant genotypes throughout the regional landscape. The initiative has worked hard to improve both the supply and demand sides of the equation by encouraging the nursery industry to propagate, and environmental engineers, landscapers, and gardeners to buy locally sourced and grown native plants. *Rhody Native*[™] plants are grown locally from seeds (and sometimes cuttings) harvested within Rhode Island using protocols to prevent over-exploitation. The species are chosen for their habitat restoration, pollinator, climate change suitability, aesthetic, or other values.



Rhody Native[™] began in 2009 as part of the Rhode Island Natural History Survey's *Forest Health Works Project*, a two-year project funded by the American Recovery and Reinvestment Act (President Obama's "stimulus package"), to employ economically depressed landscapers and arborists to improve the health of Rhode Island's most productive forests by removing invasive plants. Early on we realized that a credible invasive control project requires a restoration strategy, but we did not want the usual restoration approach that used plants of dubious genetic content purchased from out of state growers. Instead, we would use horticultural capacity right here in Rhode Island, and at the same time rectify a long-standing disjuncture in the nursery industry, namely that nurseries would not invest in native plant species without a market for them, and no garden center, landscape architect, or restoration planner would recommend plants that were not readily available in the market.

Furthermore, since the *Forest Health Works Project* involved working in the few really outstanding forest blocks left in Rhode Island, it was no place to bring in strange genotypes from who knows where, with who knows what living in the root ball. Transportation from afar

¹ Adapted from an introductory address given to a meeting of the Rhode Island Wild Plant Society, Nov. 3, 2012

would increase the project's carbon footprint and not help the Rhode Island agricultural economy. It also would not overcome the common frustration of lacking a source for desirable native plants. *Rhody Native*™ was the answer, and from there it has gone forward to meet practical native plant needs, encourage collaboration, and bring conservation activities in Rhode Island closer to their true context, the *local* natural environment.

The generic problems that *Rhody Native*™ tackles are not new. Since the time of Pliny the Elder, a defining characteristic of natural history has been the contemplation of humanity's place in world. It is a more profound question than the field's commonly perceived interest in the "fun stuff" such as counting species and describing natural communities. To a natural historian, a classical one at least, it appears we are living in unusual times when novel processes are at work in our landscape. To protect the wonderful, natural Rhode Island we love, we will need new tools and new resources and even whole new ways of thinking about conservation. We cannot go back to the Rhode Island of the past no matter how cleverly we manage the land, nor will conservation paradigms of the past be sufficient to manage natural resources now. The processes that gave us the places and landscapes we are so fond of—farms and pastures, river impoundments, lumbering, village-based settlements, and estuarine modification—are irretrievably gone. Novel processes—*invasive species, edge to edge development, climate change, overabundance of deer and the advent of coyotes*—are at work now and driving different trends.

If we look back across the 350-odd years since the European settlement of our area, the activities of humans have determined the distribution and viability of flora, fauna, and natural communities at a very large scale: establishing farms, damming rivers and draining marshes, logging, building railroads, changing agricultural practices. Yet even when an effect was widespread, it typically affected a minority of the total area, it avoided core natural areas, or it avoided affecting all core areas at once. As time passed, the landscape underwent a vegetation cycle starting with intense human use, followed by abandonment, natural succession, and then new use. Occurring on a large spatial and chronological scale, this cycle was itself a producer of high species and habitat biodiversity. After all, from a biodiversity point of view, *some* disturbance is a good thing.



Figure 1: "Old Orchard," Woodville, 1901

In coming years, however, we can expect residential and commercial development to expand across the entire state, even with heroic conservation efforts, effectively arresting the cycle of abandonment and reuse. Since the 1980s ecologists have known that the conservation of

habitat patches, even large ones, within a matrix of relatively intense human development is different in fundamental ways from conservation of a landscape with low-intensity or transitory human activity, widespread though it may be. Residential and commercial development now is dense enough, even in the most remote areas of Rhode Island, for storm water run-off, outdoor lighting, lawn chemicals, and septic outflow to impact any refuge of rare and interesting plants and animals—fens, floating bogs, cold water streams, or sand barrens. Furthermore, delicate habitats, no matter how remote, are also now under stress from global trends such as acidification, atmospheric nitrogen deposition, climate change, and sea-level rise.

In considering land management strategies, we must remember that many New England habitats of interest were created by historic agricultural uses. Widespread small-field tillage, open grazing, and hay production resulted in widespread grasslands, shrublands, hedgerows, and wet meadows, as well as the flora and fauna they foster—bobolinks, meadowlarks, orchids, regal fritillaries, toads, and more. As the historic land use practices waned, so too did the special habitats and species and now we find that traditional land conservation via land acquisition alone does not reproduce them accurately or on a large enough scale to save what we really want to save: the look and biodiversity of “old Rhode Island.”

Preserving land from development is a necessary but insufficient technique for preserving landscape-scale biodiversity. Land preserved from development but left unmanaged today will soon be overrun with invasive plants that support few interesting animal species. But the old ways of agriculture cannot be re-instituted. The recent local food movement is returning some “texture” to farmland, but other trends work against bringing back New England’s historic farm habitats. Meanwhile, black swallowwort and knapweed undercut the use of pastures and hay meadows, and the presence of coyotes requires that the few sheep left be more intensively managed. For cows, wells and pumps reduce the need for farm ponds, and market gardening uses the land completely differently from commodity cropping. The pace of ecological change is unprecedented, even when compared to the dramatic changes following the arrival of Europeans on the continent.



Figure 2: Cow Pasture, Middletown, Early 20th C.

But novelty itself is a wonderful opportunity for those of us who want to make a difference in conservation. We cannot reconstruct old ways and there are limits to the value of prior experience, so no one is an expert and everyone is an expert. What was the right grazing or mowing regime for grassland birds or pollinators just 20 years ago is now a good way to produce an autumn olive monoculture. Today, nothing you do in conservation land stewardship follows a time-tested method; everything you do is a potentially valuable

experiment. Unable to use sheep to clear wall and fence lines, landowners are trying other grazers, herbicides, mechanical tools, and strategic plantings. Each has pluses and minuses, each interacts with other activities in unique ways, and none produces results that look like photos of Rhode Island from the 1880's.

In this changing landscape we need not be completely forlorn. Scientific advances in ecology and allied, applied disciplines (wildlife management, restoration ecology, and others) have given us more precise ways to observe and understand animals, plants, and habitats. New models for organizing public involvement, such as land trusts, the RI Conservation Stewardship Collaborative, or the *Rhody Native™* initiative, give us new capacities. You have to keep moving... in your knowledge, your thinking, and your actions, or things will change and you will be left behind.

Science, policy, public engagement, communication, and coordination are all essential. If we are to maximize our effectiveness we need to do the following:

- a) get better data on the location and viability of rare species, and species of importance to rare natural communities;
- b) be less complacent about the plant material we use in habitat restorations, and develop ways to harvest, propagate, and establish more native species;
- c) learn how to grow and re-establish rare or ecologically important species of plants because propagation and assisted migration of many species will become increasingly important;
- d) invent new agricultural practices drawing on historical small-scale practices, good modern practices, and innovative ideas for fencing, feeding, and watering, mowing, and breed selection;
- e) develop new ways to manage invasive species with more efficient use of resources

or we will lose before we've even begun.

The *Rhody Native™* initiative is tackling one of these needs by bringing together conservationists, resource managers, nursery growers, and plant retailers. It corrects a problem in the plant market. It educates and engages scores of citizen gardeners and fieldwork volunteers in environmental stewardship. It contributes to the long-term health of Rhode Island's environment and the sustainability of our human communities. We hope other similarly collaborative programs will arise to address other needs.

Figure 1: Roger Williams Park Museum of Natural History and Planetarium Photographer: Oliver Kendall Jr., "Old Orchard, Woodville," 1901, in Virtual Archives, Item #438, <http://sos.ri.gov/virtualarchives/items/show/438> (accessed April 4, 2013).

Figure 2: Roger Williams Park Museum of Natural History and Planetarium, "Milk reeds in Newport[sic]," 1909-1924, in Virtual Archives, Item #431, <http://sos.ri.gov/virtualarchives/items/show/431> (accessed April 4, 2013).