

# CASRI

The Central Appalachian  
Spruce Restoration Initiative

## THE CENTRAL APPALACHIAN SPRUCE RESTORATION INITIATIVE

PROTECTING ONE OF THE CENTRAL APPALACHIAN'S MOST UNIQUE  
ECOSYSTEMS: 2014 HIGHLIGHTS

### YEAR-END REVIEW

*We are pleased to share highlights of the Central Appalachians Spruce Restoration Initiative!*

CASRI is a diverse partnership of private, state, federal, and non-governmental organizations who share a common goal of restoring historic red spruce-northern hardwood ecosystems across the Central Appalachians.

CASRI's vision is of a functioning red spruce-northern hardwood forest ecosystem restored across portions of its former range on both public and private lands, with the scale, connectivity, maturity and other features that provide habitat to sustain and enhance the viability of the many species and natural communities dependent on this ecosystem.



Ben Rhodes cheerfully pulls invasive garlic mustard with the Potomac Highlands CWPMA field crew.



Ashley Akers, AmeriCorps member of the Ecological Restoration Team, plants a red spruce seedling.

We  
Are  
CASRI



West  
Virginia  
Highlands  
Conservancy



The Nature  
Conservancy  
Protecting nature. Preserving life.™



APPALACHIAN  
MOUNTAINS  
JOINT VENTURE



APPALACHIAN  
LANDSCAPE CONSERVATION COOPERATIVE

The Mountain Institute  
www.mountain.org/appalachia

### MAJOR HIGHLIGHTS

*2014 proved to be another extremely productive and fruitful year for CASRI:*

- Over \$896,000 for land conservation purchases and on-the-ground restoration projects in 2014, totaling \$2,984,141 raised to date.
- Over 750 acres of high-elevation lands placed on a trajectory to develop into functioning red spruce ecosystems, bringing our restoration total to nearly 2,250 acres.
- 58,000 red spruce seedlings and 39,575 native plants were planted upon high priority conservation and restoration sites.
- Volunteers dedicated 461.5 hours of their time working to restore red spruce.
- Over 600 acres of non-native invasive species were treated in high-elevation red spruce systems.
- The monitoring subcommittee developed and finalized a rapid assessment monitoring datasheet, protocol, and Access database for red spruce plantings and sites for use in future monitoring.

## HEADS IN THE TREES, FEET ON THE GROUND

*CASRI hit the ground running this year, carrying out a broad array of restoration projects:*

- The **Canaan Valley National Wildlife Refuge** brought 104 volunteers to the Refuge during volunteer events who planted 8,300 red spruce seedlings on 82 acres. These events are used to achieve restoration objectives and educate volunteers about the importance of spruce ecosystems and restoration.
- **The WV Division of Forestry – Kumbrabow State Forest** released 50 acres of red spruce through commercial timber harvest, established four permanent spruce research plots with pre-harvest baseline data, created 25 vernal pools/wetland areas within the commercial release plots, and hosted an Active Spruce Restoration Field Tour for CASRI partners. Additionally, **The Nature Conservancy**, working with Dave Saville, released a total 472 acres of understory spruce in the Greenbrier River watershed.
- **The Nature Conservancy** planted 35,000 red spruce seedlings and 14,000 northern hardwood seedlings across 186 acres of the Pharis Knob/Gandy Ranch conservation easement and 7 acres of adjacent USFS land, for a total 193 acres. The **Potomac Highlands CWPMA Field Crew**, which is employed by TNC, treated 576 acres of invasive species in and around red spruce-northern hardwood forests.

*CASRI would like to thank the following organizations that have contributed funding to support conservation and on-the-ground efforts in 2014:*

Appalachian Stewardship Foundation

Arbor Day Foundation

Environmental Protection Agency: American Rivers Grant

Ohio River Basin Fish Habitat Partnership

Outdoor Heritage Conservation Fund

U.S. Forest Service and NRCS Chiefs' Joint Landscape Restoration Partnership

West Virginia Department of Environmental Protection  
Wildlife Conservation Society



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Several of CASRI's partners are engaged in spruce release. At left, a gap created by commercial spruce release at Kumbrabow SF promotes growth of mid-story spruce into the canopy. On the right, the TNC field crew girdles a neighboring maple to release a young spruce tree. The trees girdled are selected based on factors, such as abundance and wildlife use.

### RESEARCH

*The research done by CASRI partners leads to a better understanding of the ecological relationships within spruce communities. This year, our partners released research on a diverse range of topics:*

- **Corinne Diggins** (Virginia Tech) conducted a microhabitat assessment for WV northern flying squirrels using telemetry data.
- **Brandon Davis** (NC State University) tracked snowshoe hares to study the relationship between color change and weather patterns.
- **Melissa Thomas-Van Gundy** used the landscape scale model LANDIS-II to simulate the response of red spruce-dominated forests to restoration actions over 100 years.
- **Jim Rentch** and others presented 6 year results of understory red spruce release.
- **West Virginia Restoration Venture (USFS, WVU, NRCS)** gave grad level presentations on restoration and associated spodosols, based on research by **Travis Nauman**. **Katey Yoast** published carbon estimates for above ground and below ground systems. This data shows that the red spruce ecosystem has tremendous carbon sequestration potential.

To learn more about CASRI and view the complete 2014 annual report, visit:

<http://RestoreRedSpruce.org>



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