

Young Forest

Definition

Young forest is forest habitat that is regenerating from natural or human disturbance and dominated by seedlings and saplings, regardless of natural community type (King and Schlossberg, 2014). It is defined as an area with greater than 50 percent cover of woody seedlings, shrubs, or saplings, up to 4.9" diameter, and at least 450 stems/acre. It includes early successional stands of shade intolerant pioneer species, as well as regenerating forest of mature forest species, such as sugar maple, hemlock, or red spruce. In general, young forest is comprised of trees less than 15-20 years old.

Ecological Function

Young forest habitat is recognized as essential to maintain viable, healthy populations of at least 65 species of wildlife in the northeast states (Gilbart 2012). Fifty-four Vermont Species of Greatest Conservation Need (SGCN) and 4 categories of insects (bumble bees, butterflies, moths, Carabid beetles) require or depend heavily upon young forest or old field/shrub habitat to maintain healthy populations. Young forest also supports many common species. Prior to European settlement in Vermont almost all young forest was created by natural disturbance. Currently, forest management creates the majority of young forest in the state.

Priority Target for an Ecologically Functional Landscape

A percentage of the forest in each biophysical region should be young forest:

- 5% of the forest in young forest condition: Northeastern Highlands, Northern Vermont Piedmont, and Northern Green Mountains
- 3-4% of the forest in young forest conditions: All other biophysical regions

Highest Priority:

Achieve the above percentage targets for young forest within VCD highest priority forest blocks, using the following acreages:

- Northeastern Highlands - 22,000 acres
- Northern Vermont Piedmont - 31,000 acres
- Northern Green Mountains - 36,000 acres
- Southern Green Mountains - 22,000 to 30,000 acres
- Southern Vermont Piedmont - 8,400 to 11,200 acres
- Taconic Mountains - 8,000 to 11,000 acres
- Vermont Valley - 1,050 to 1,400 acres
- Champlain Hills - 3,600 to 4,800 acres
- Champlain Valley - 5,700 to 7,700 acres

Guidelines for Maintaining Ecological Function

Provide young forest in discrete, contiguous blocks of at least 5 acres, with a minimum diameter of 375 feet, or in “Functional Equivalent Units.” A Functional Equivalent Unit is created when a patch of young forest is created adjacent to an existing area of young forest <5 acres in size, so that the combined area is >5 contiguous acres of young forest with a combined diameter at of least 375 feet. Combined adjacent young forest may be a patch of regenerated forest, an area maintained by mowing, burning or herbicide such as a utility right-of-way, a successional old field, and/or young forest created by natural disturbance such as windthrow or beaver activity adjacent to these areas.

When creating young forest through active management, locate young forest in common and widespread matrix natural communities. Design patches so they have a high interior to edge ratio. Prevent or control the spread of invasive plant species in young forest patches. The creation of young forest has the potential to impact other conservation targets and should be planned to avoid conflicts with other targeted elements.

Although the majority of young forest is expected to be created through active forest management, young forest resulting from natural disturbance also contributes to these targets. When practical, allow these disturbances to proceed under natural dynamics with little or no intervention. Maintaining residual structures such as downed wood and root tip ups can provide important habitat diversity in these places.

Restoration Needs

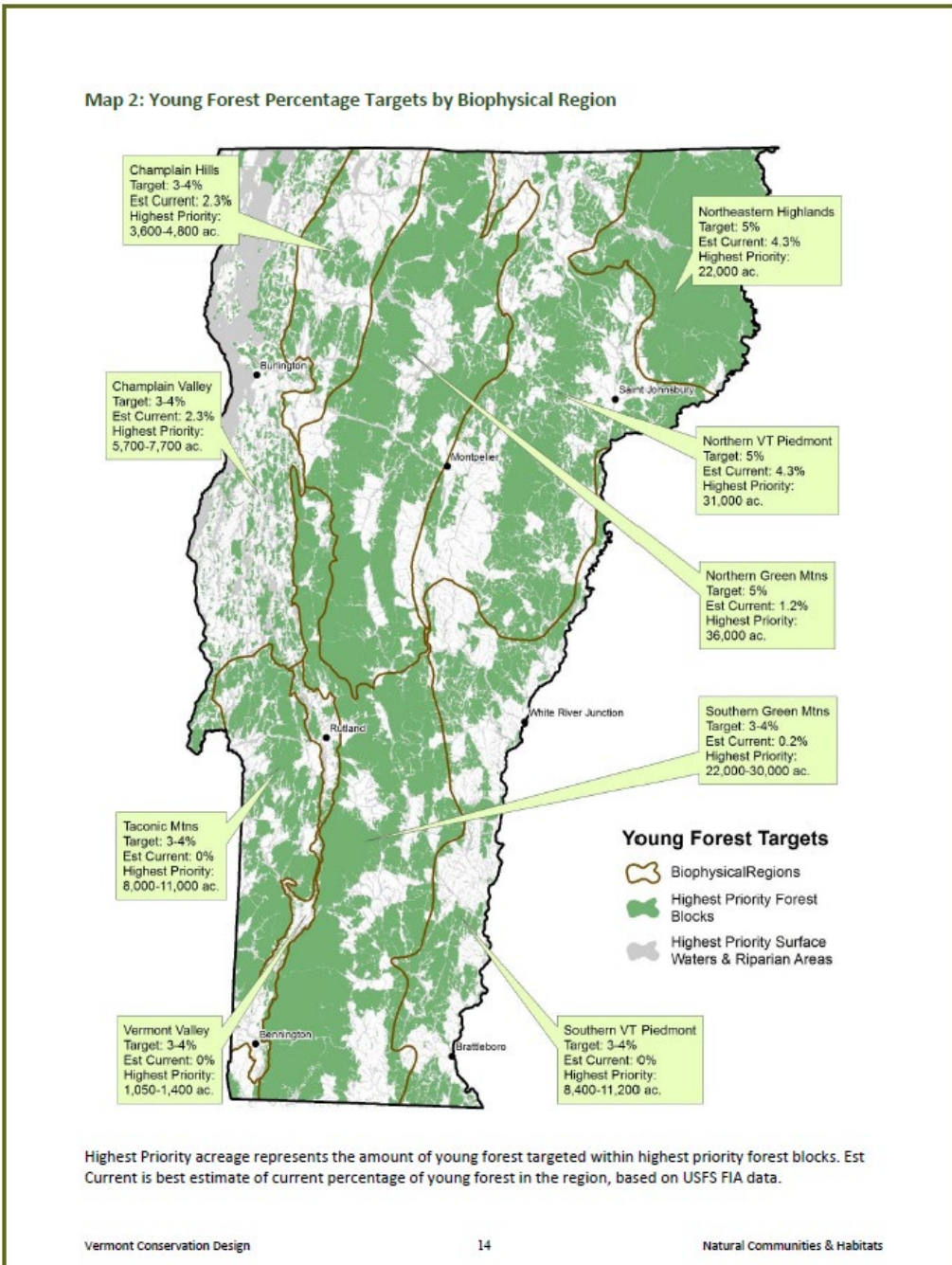
At present young forest is not adequately represented in all biophysical regions in Vermont. Creation of young forest through a combination of forest management and natural disturbance is needed to achieve these targets.

Methods and Rationale

Species requiring young forests have evolved with that habitat created by natural disturbance regimes. Since European settlement in Vermont, the abundance of young forest has varied widely, reaching a peak during the reforestation of the mid-20th century. Today, there is less young forest than before European settlement. A return to the pre-European abundance of young forest would reverse a declining trend and reach a level that at one time supported all of Vermont’s native species that require young forest. Thus, target percentages of young forest condition in each biophysical region are based on the expected percentages of the regional landscape occupied by the 1-15 year age class before European settlement (Lorimer and White 2003) as applied to Vermont’s forest cover (Darling et al. 2001). The patch size characteristics are recommended based habitat needs of young forest obligates as identified by multiple sources (Schlossberg and King 2007, Schlossberg and King 2015, Roberts and King 2017, Yamasaki et. al. 2014, Chandler et. al. 2009).

Mapping Comments

Young forest targets are not mapped. Spatial locations of young forest are dynamic and expected to change as a result of harvesting and natural disturbance patterns over time.



For more information

For more information specific to this component, contact Vermont Fish & Wildlife Department, Jens Hilke, at 802-461-6791, jens.hilke@vermont.gov and Bob Zaino, at 802-476-0128, Robert.Zaino@vermont.gov