



A Natural Forest Ecosystem: Best Practice for Natural Area Stewardship

Executive Summary: *Natural Area Stewardship is a policy developed by the Simsbury Open Space Commission, a combination of elected (First Selectman, and Chairs of Planning, Zoning, Culture Parks and Recreation, Conservation Commission) and appointed (3) members. Relevant expertise on the commission includes a naturalist, a biologist, a mental health professional, an early childhood education and a secondary school science teacher. We sought extensive consultation with a climate scientist, multiple ecologists, a public policy expert, and additional experts via the Old Growth Forest Network.*

The Natural Area Stewardship policy was developed over about 2 years and as of March 2022 has been applied to about 5% of the town - municipal land intended to be enjoyed as natural areas that do not need routine maintenance. The Open Space Commission plans to set up a volunteer program for regular monitoring.

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Best Practice for [Natural Area Stewardship](#)

This is an overview and a “best practice” primer on “Natural Area Stewardship” in forest. Natural Area Stewardship is what most people want and expect in a public nature preserve.

The goal of this document is to provide basic information and answers to frequently asked questions (FAQs) on Natural Area Stewardship – what it is, where it can be practiced, what are the benefits, how to monitor a property, and how to determine when and why to intervene.

A curated non-exhaustive list of open-access resources with supporting science, examples, protocols and more detailed plans and background information is provided below.

What is Natural Area Stewardship?

Natural Area Stewardship allows natural processes, rather than regular active management by people, to shape a forest. It is possible on a parcel of any size and any forest type. It is a largely hands-off approach, recognizing that forests evolved millions of years ago, and in the absence of humans. Forests are well-equipped to persist and endure without our help - even in the face of 21st century environmental change. A Natural Stewardship approach understands that ‘threats’ to forests (i.e., wind, insects, disease, fire, drought) are the very disturbances that often enhance their complexity, carbon sequestration, regeneration, and habitat diversity. It is practiced in what is often termed a “wildwood,” “wild forest,” or “wildland.”

Where Should Natural Area Stewardship be Practiced?

Natural Area Stewardship is *possible* for all or part of any forest that is not being managed actively for resources (such as wood), as part of an intervention-based research program, or as a specific type of habitat, *unless* natural stewardship is precluded legally by deed or easement requirements (i.e. working forest, etc.). In general, Natural Area Stewardship does not prevent interventions as needed for public safety reasons.

Natural Area Stewardship is similar to the stewardship of National Parks in the United States. It may be *required* if a forest is protected by a “Forever Wild” or similar conservation easement; is designated as “wild,” “natural” or “intact;” or fulfills a landowner’s or donor’s intent.

Currently less than 5% of Southern New England is under Natural Area Stewardship, and only a small fraction (~1% in Connecticut) is legally protected as such. Meanwhile, the crises in biodiversity and species extinction are accelerating, and scientific consensus is that at least

30% of Earth's land and water needs strong protection, termed "Gap 1" or "Gap 2." This is an urgent gap in public policy.

What Are the Benefits of Natural Area Stewardship?

1. Maximize cumulative carbon storage above and below ground.
2. Maximize ecological and structural complexity over time.
3. Maximize purification of local air and water.
4. Protect molecular and genetic diversity, and the full spectrum of native biodiversity.
5. Generally minimizes invasive plants and therefore their progression or remediation.
6. At broad scales, reduce the rate of species' extinction.
7. Connect people to nature with an opportunity to escape and experience a sense of awe.
8. Enable people to attach to a place that can be shared within and across generations.
9. Provide needed "control" areas and baselines to compare with managed areas.
10. Save time and money: no regular maintenance is required.

What Are Some Examples of Natural Area Stewardship?

Examples of areas in the United States under Natural Area Stewardship include National Parks, the Adirondack Forest Preserve, forests in the Old Growth Forest Network, some nature preserves, and USDA forest service wilderness areas. See links below for more information.

Globally, the International Union for the Conservation of Nature (IUCN) Protected Areas are dedicated to "*long term conservation of nature with its associated ecological services and cultural values.*" Most categories either *require* or *do not preclude* Natural Area Stewardship.

What is Public Opinion on Natural Area Stewardship?

Protecting public land has high bipartisan support (>80% nationally, higher in New England). Protection of public land *as nature preserves* in Southern New England was supported by 90% of respondents in a survey hosted by the Program for Public Values. Protecting old-growth forest was supported by 99% of respondents. Support did not differ among Southern New England states. Each response was validated and anonymous, and respondents matched the median income for the region. The public assumes 20% of the land is under Natural Area Stewardship now and they want 40% protected for nature (40%). Currently it is less than 1%.

Summary: A major priority is *protecting more natural areas and connecting them.*

Establishing a network of suitable areas for Natural Area Stewardship is urgent: the vast majority of our landscape is developed, managed routinely, and/or has no long-term protection. Natural Area Stewardship is practiced purposefully on less than 4% of New England, yet international scientific consensus recommends protecting at least 30% (or even 50% - "Nature Needs Half"). We need to protect high quality, connected habitat, and fund evidence-based

restoration where possible. Connected, intact habitat is the backbone of a healthy landscape and is the foundation for additional areas for research and responsible resource production.

Natural Area Stewardship: Best Practice Guidelines

No routine maintenance is required - nature is in charge. Natural areas are “managed with restraint” and are “intended to be self-willed lands, both philosophically and practically.” This is true under both stable conditions and in the aftermath of major disturbances such as tropical storms, tornadoes, insect and pathogen outbreaks, and fire (www.wilderness.net). Downed, broken, and dead trees are all part of a natural forest and should not be cause for concern or result in a shift in management philosophy towards one of intervention.

If adverse conditions develop (progressive trail erosion, threats to public health, etc.) they should be addressed based on a precautionary principle and aligned with interdisciplinary science. For additional guidance, see National Park Service, Adirondack Park, or Wilderness Area guidelines and additional regional stewardship resources linked below. Principles include:

Let nature take its course. Leave dead trees and downed logs in place after a storm where possible, except where they block important trails. Trees may be removed from the trail but left in the forest. Allow insect and pathogen outbreaks to proceed as part of a natural processes. Natural forests thrive on and recover from natural disturbances.

Monitor major trails. If trails are present, regular monitoring (at least annually) can prevent progressive damage, remove hazards, address erosion, etc. Passive recreation is allowed.

Monitor ecological integrity, borders. Monitor borders to prevent encroachment, dumping, building, etc. Note that edges and trails are areas where invasives (especially invasive plants) can gain a foothold. If unchecked, some invasives can affect the regeneration or long-term integrity of the forest or increase the presence of disease vectors like ticks. How, when and if an invasive is removed or addressed should align with the precautionary principle and is a dynamic field of research. Committing to invasive remediation should be considered in consultation with a local practitioner (i.e. forest ecologist, forester, forest scientist, field botanist, land steward, etc.) familiar with Natural Area Stewardship. Native trees, such as American beech, should not be treated as invasives.

Regular photopoints and data collection are scientifically valuable. This is optional, but it is important to emphasize that there is little long-term data on natural forests. Forests shaped primarily by natural processes rather than by management by people serve as valuable baselines and reference areas (scientific “controls”). Established monitoring plots and periodic measurements of the trees and other vegetation can quantify changes over time and provide a valuable reference area for other properties that are being actively managed for different

values. It is important to collect more data going forward, but right now forests managed for many decades with Natural Area Stewardship (National Parks, Adirondacks) generally have more diversity, more carbon, and fewer invasive plants than managed areas.

Additional Resources on Natural Area Stewardship

US Forest Service Research Natural Areas

https://www.nrs.fs.fed.us/rna/local-resources/downloads/rna_fs_503.pdf

National Park Service Stewardship and Science Directorate:

<https://www.nps.gov/orgs/1778/whatwedo.htm>

Wildlands and Woodlands Stewardship Science Manual

<https://www.wildlandsandwoodlands.org/science-initiatives/stewardship-science>

Northeast Wilderness Trust - dedicated to Natural Area Stewardship and Wild Carbon

("Wilderness Partnership") <http://northeastwildernesstrust.org/wilderness-conservation/wp/>

Adirondacks: <https://wildadirondacks.org>

Eastern Wildways Network: <https://wildlandsnetwork.org/wildways/eastern/>

Old-Growth Forest Network: <https://www.oldgrowthforest.net/>

International Union of Conservation of Nature: www.iucn.org

Global Standard for Nature-based Solutions

<https://portals.iucn.org/library/sites/library/files/documents/2020-020-En.pdf>