Combined Climate-Smart Practices List

These 14 forest management practices come from two sets of meetings of landowners, foresters, academics, loggers, land trusts, state and federal agency staff, and regional planners in New England in 2020-2021. These two efforts had a primary focus on carbon or adaptation, even though by definition climate-smart practices have both carbon benefits (across varying time frames) and help forests adapt to climate change. This list is current as of January 2022.

A = Practices from the Massachusetts Forest Climate Resilience Program pilot, designed to help forests adapt to climate change. Practice development was led by Massachusetts Audubon and the Northern Institute of Applied Science, along with many stakeholders.

C = Practices from the Natural Climate Solutions Accelerator grant project in Massachusetts and Vermont, designed to increase forest carbon stock within 20 years. Practice development was led by The Nature Conservancy and the Northern Institute of Applied Science, along with many stakeholders.

Management Practice	C	A	Short Description
Keeping the Forests We Have			
Avoid forest loss	C	A	Reduce or eliminate the conversion of forest to non-forest use since forestlands contain more carbon than most other land use types and keeping land in natural forest cover maintains the ability of landscapes to adapt to changing conditions.
Respond to disturbance		A	Respond to a major disturbance to the forest by using one or more of the above practices to aid in post-disturbance recovery where ecosystem services and forest condition have been highly degraded.
Growing New Forests and Trees			
Reforest	C	A	Through seeding, stocking, or natural reforestation, create forest with a diversity of tree species in an area that used to be but is not currently forest. Use climate-informed species that are suitable to the location. Expected to be used with invasive species control and deer protection when needed.
Green developed areas	C	A	Plant trees in urban and residential areas to add carbon stock as trees grow, and provide many local benefits to air quality, stormwater management, and human health and well-being. Use climate-informed species that are suitable to the location. Expected to be used with invasive species control and deer protection when needed.
Plant trees to increase forest stocking	C	A	Enrichment or supplemental planting in forests to support climate adaptation. Use climate-informed species that are suitable to the location. Combine with invasive species control and deer protection when needed.
Intentional Passive Management			
Establish forest reserves	C	A	Intentional passive management (with exceptions for invasive removals or novel outbreaks of forest pests and pathogens) to maintain ecological, carbon, and other benefits. Reserves can be established on all or a portion of a forest. This practice is not appropriate everywhere, and may be most appropriate on sites with high carbon density and low vulnerability to climate change impacts (carbon), or unique or sensitive sites, which may include locations that contain at-risk species, sensitive ecosystems (e.g., vernal pools or riparian areas), or potential climate refugia (adaptation).

			Maintaining these areas preserves that adaptive capacity of these systems and may support landscape-level adaptation.
Increase time between harvests	C		Wait longer between harvests to grow larger trees that are more likely to be used in long-lived wood products. For example, this may take the form of delaying a harvest in your current 10-year management plan until the next 10-year plan.
Reduce Stressors			
Climate-informed forest access and forestry operations		A	Reduce impacts to hydrology, soils, and nutrient cycling associated with shorter winters, extreme precipitation events, and other climate changes, by following best management practices updated for dealing with these conditions.
Remove invasive vegetation	C	A	Remove heavy infestations of invasive plants that compete with regeneration or reduce growth of existing trees, either pre- or post-harvest, or both. May include the use of herbicides and/or mechanical cutting of invasive plants, and treatment over several years. Control of competing vegetation may be needed to maintain ecosystem functions as well as facilitate regeneration of forests along desired trajectories.
Protect seedlings and saplings from deer browse	C	A	Reduce over-browsing and protect regeneration from animal damage. Practices may include use of tree shelters or exclusion fencing. Protecting desired vegetation from browse help maintain ecosystem functions and facilitate regeneration of forests along desired trajectories.
Active management			
Create gaps to promote regeneration	C		Balance creation of gaps to promote regeneration with retention of existing carbon stocks when forests are undergoing harvests. For example, retain a minimum number of large-diameter live trees, snags (see NEFF's Exemplary Forestry standards), and live-but-dying trees (future snags), and limit gap creation to no more than 20% of the parcel.
Retain more carbon in a thinning	C		Limit the removal of trees in thinnings to retain large-diameter live trees, snags, and species diversity. For example, set aside between 25-50% of the stand as unharvested (retention) areas, and thin to partway between the A and B lines on a stocking chart, maintaining tree diameter.
Enhance adaptive capacity in forests (Resilience)		A	This practice is designed to improve the health and function of the current native forest vegetation in response to climate change. Silvicultural activities under this practice are designed to (1) reduce the impact from current and future stressors and disturbances, (2) diversify forest conditions to increase the capacity for adaptive responses, and (3) promote future-adapted regeneration of the current native plant community when forest regeneration (i.e., initiation of a new age cohort) is a desired outcome.
Facilitate forest transition to better match future conditions (Transition)		A	This practice is designed to facilitate transitions in forest communities toward assemblages that are expected to be better adapted to future conditions and support anticipatory adaptation where climate change is expected to exceed the capacity of the existing forest community to cope with climate change impacts and associated stressors (e.g., highly vulnerable or impacted systems).