Menu of Adaptation Strategies and Approaches

Developed for Urban Forests and Human Health

Strategy 1: Activate social systems for equitable climate adaptation, urban forest, and human health outcomes.

1.1. Address socio-ecological systems in early, comprehensive response.
1.2. Integrate urban forestry in climate planning and policy.
1.3. Address climate and health challenges of disadvantaged communities and vulnerable populations.

Strategy 2: Reduce the impact of human health threats and stressors using urban trees and forests.

2.1. Reduce extreme temperatures and heat exposure.
2.2. Improve urban air quality conditions.
2.3. Anticipate and reduce human health impacts of hazardous weather and disturbance events.

Strategy 3: Maintain or increase extent of urban forests and vegetative cover.

3.1. Minimize forest loss and degradation.
3.2. Maintain existing trees through proper care and maintenance.
3.3. Restore and increase tree, forest, and vegetative cover.
3.4. Sustain sites and ecosystems that provide high value across the landscape.

Strategy 4: Sustain or restore fundamental ecological functions of urban ecosystems.

4.1. Maintain or restore soils and nutrient cycling in urban areas.
4.2. Maintain or restore hydrologic processes in urban forests.
4.3. Restore or maintain fire in fire-adapted ecosystems.

Strategy 5: Reduce the impact of physical and biological stressors on urban forests.

5.1. Reduce impacts from extreme rainfall and enhance water infiltration and storage.
5.2. Reduce risk of damage from extreme storms and wind.
5.3. Reduce risk of damage from wildfire.
5.4. Maintain or improve the ability of forests to resist pests and pathogens.
5.5. Prevent invasive plant establishment and remove existing invasive species.
5.6. Manage herbivory to promote regeneration, growth, and form of desired species.

Strategy 6: Enhance taxonomic, functional, and structural diversity.

6.1. Enhance age class and structural diversity in forests.
6.2. Maintain or enhance diversity of native species.
6.3. Optimize and diversify tree species selection for multiple long-term benefits.
6.4. Maintain or enhance genetic diversity.

Strategy 7: Alter urban ecosystems toward new and expected conditions.

7.1. Favor or restore non-invasive species that are expected to be adapted to future conditions.
7.2. Establish or encourage new species mixes.
7.3. Introduce species, genotypes, and cultivars that are expected to be adapted to future conditions.
7.4. Disfavor species that are distinctly maladapted.
7.5. Move at-risk species to more suitable locations.
7.6. Promptly revegetate and remediate sites after disturbance.
7.7. Realign severely altered systems toward future conditions.

Strategy 8: Promote mental and social health in response to climate change.

8.1. Provide nature experiences to ease stress and support mental function.
8.2. Encourage community and social cohesion to support climate response.

Strategy 9: Promote human health co-benefits in nature-based climate adaptation.

9.1. Co-design large-scale green infrastructure and built systems to promote health.
9.2. Provide micro-scale nature experiences to promote health and healing.

MORE INFORMATION: *This menu of adaptation strategies and approaches can be as a stand-alone resource or within the Adaptation Workbook decision-support framework found in Swanston, C.W.; Janowiak, M.K.; Brandt, L. A.; Butler, P.R.; Handler, S. D.; Shannon, P.D.; Derby Lewis, A.; Hall, K.; Fahey, R.T.; Scott, L.; Kerber, A.; Miesbauer, J.W.; Darling, L.; Parker, L.; St. Pierre, M. 2016.* ***Forest adaptation resources: climate change tools and approaches for land managers, 2nd ed.*** *Gen. Tech. Rep. NRS-GTR-87-2. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 161 p. doi.org/10.2737/NRS-GTR-87-2.*

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