Menu of Adaptation Strategies and Approaches

Developed for Urban Forests

**Strategy 1. Sustain or restore fundamental ecological functions.**
1.1. Maintain or restore soils and nutrient cycling in urban areas.
1.2. Maintain or restore hydrology.
1.3. Maintain or restore riparian areas.
1.4. Reduce competition for moisture, nutrients, and light.
1.5. Restore or maintain fire in fire-adapted ecosystems.

**Strategy 2. Reduce the impact of biological stressors.**
2.1. Maintain or improve the ability of forests to resist pests and pathogens.
2.2. Prevent the introduction and establishment of invasive plants and remove existing invasive species.
2.3. Manage herbivory to promote regeneration, growth, and form of desired species.

**Strategy 3. Reduce the risk and long-term impacts of severe disturbances.**
3.1. Alter forest structure or composition to reduce risk or severity of wildfire.
3.2. Maintain trees and remove hazards to reduce severity or extent of wind and ice damage.

**Strategy 4. Maintain or create refugia.**
4.1. Prioritize, maintain, and restore unique sites.
4.2. Prioritize and maintain sensitive or at-risk species or communities.
4.3. Establish artificial reserves for at-risk and displaced species.

**Strategy 5. Maintain and enhance species and structural diversity.**
5.1. Promote diverse age structure.
5.2. Maintain and restore diversity of native species.
5.3. Retain biological legacies.
5.4. Establish reserves to maintain ecosystem diversity.

**Strategy 6. Increase ecosystem redundancy across the landscape.**
6.1. Manage habitats over a range of sites and conditions.
6.2. Expand or buffer the boundaries of reserves to increase diversity.

**Strategy 7. Promote landscape connectivity.**
7.1. Reduce landscape fragmentation.
7.2. Maintain and create habitat corridors through reforestation or restoration.

**Strategy 8. Maintain and enhance genetic diversity.**
8.1. Use seeds, germplasm, and other genetic material from across a greater geographic range.
8.2. Favor existing genotypes that are better adapted to future conditions.
8.3. Use new genotypes that are better adapted to future threats and conditions.

**Strategy 9. Facilitate composition adjustments through species transitions.**
9.1. Favor or restore native species that are expected to be adapted to future conditions.
9.2. Establish or encourage new mixes of native species.
9.3. Select tree species to match current and future site conditions.
9.4. Protect future-adapted seedlings and saplings.
9.5. Disfavor species that are distinctly maladapted.
9.6. Manage for species or genotypes with wide moisture and temperature tolerances.
9.7. Introduce species that are expected to be adapted to future conditions.
9.8. Move at-risk species to locations that are expected to provide habitat.

**Strategy 10. Realign urban ecosystems after disturbance.**
10.1. Promptly revegetate sites after disturbance.
10.2. Prioritize remediation of remaining trees following disturbance.
10.3. Realign significantly disrupted ecosystems to meet expected future conditions.