

*The following statement is adapted from a policy statement developed and approved by the Southern Group of State Foresters. This statement was endorsed by the NASF Forest Resource Management Committee on 1/14/09 and endorsed by the NASF Executive Committee on 03/10/09. It supplements the NASF Policy Statement "Climate Change Issues, Policy and the Role of Forests" approved by NASF members in Resolution 2008-2. This statement expires December 31, 2014 unless otherwise acted upon by the NASF Executive Committee.*

## **NASF Adaptation and Mitigation: Concepts for Forest-Climate Adaptation and Mitigation Legislation and Administrative Policy**

The following components are suggested for consideration in development of federal policy regarding potential climate adaptation and mitigation strategies for the nation's forests. The intent is to primarily utilize existing authorities (as amended) to provide expanded program frameworks and funding, particularly for the adaptation components. The rationale for adaptation is that such programs can and should be implemented and adequately funded whether or not cap-and-trade legislation comes to pass. However, if cap-and-trade policies are established, supplemental or expanded revenue streams should enhance funding for adaptation as well as mitigation.

Adaptation strategies should be clear enough that questions about additionality and leakage that may apply to mitigation (in the context of carbon credit programs) are not at issue. Rather, the premise should be that the collection of adaptation services have value in part or whole to contribute to forest resource resilience and opportunities to make favorable adjustments. Adaptation efforts should include measures to resist or minimize adverse impacts, accept or accommodate inevitable change, or proactively guide and seize opportunities created by change. While the climate change paradigm is highly complex and many uncertainties exist, a bias for action is nevertheless suggested that relies upon best professional judgment of the science at hand.

Most adaptation strategies are a re-configuration of existing programs that apply planning, research, technical assistance, education, and incentives to a particular aspect of climate change. Those aspects may be a variety of state-wide and regional applications but in some cases may have unique characteristics that define a landscape or set of sites. For example, as a climate stressor, changes in forest hydrology are predicted which might call for site-specific adjustments in management of certain forest types. Another stressor such as temperature could shift the distribution of forest types and perhaps prompt the planting of more drought resistant species or genotypes or increase the opportunity to restore otherwise limited forest types.

Because of the complexity and scale of adaptation issues, it is important to view subsequent strategies as highly coordinated efforts among agencies, organizations and perhaps yet to be formed partnerships. Institutional capacity to implement programs that may be authorized by Congress must be addressed and provide for improved efficiencies in inter-agency coordination, contracting, grants administration, and innovative public-private sector collaboration at all levels.

A comprehensive approach to forest-climate policy should include a combination of improved resource assessment capabilities, monitoring, technical assistance, incentives and potential role in cap-and-trade legislation. Potential components may include the following:

**I. Assessment: Determination and characterization of stressors (e.g. temperature shifts, change in precipitation patterns, air quality impacts, etc.) and their impacts on the condition of forest resources over time.** Assessments may rely on a mix of best available judgment and predictive models. Emphasis should be given to those impacts that are likely to create significant losses in resource values as well as opportunities to take advantage of potential changes in forest ecosystems. In either case the ability to employ adaptation measures that are practical and meaningful should be carefully evaluated.

RECOMMENDATION: Through administrative guidance, utilize the State Assessment and Resource Strategy process as authorized in the recent Farm Bill to identify and describe forest-climate impacts, vulnerabilities, opportunities and priorities for adaptation/mitigation intervention.

RECOMMENDATION: Expand and accelerate applied research that builds models to assess and predict climate impacts on forest resources at precisions useful to state-level planning.

RECOMMENDATION: Convene panel of experts or similar initiative to identify research needs and package analytical tools and services for distribution as soon as possible.

RECOMMENDATION: Improve the Forest Inventory and Analysis (FIA) Program to achieve timely monitoring, evaluation and reporting on climate impacts for all states including potential for "early detection or indicator forest sites."

RECOMMENDATION: Assess status and capability of nurseries to provide appropriate genotype and provenance seed and seedlings for adaptation afforestation/ reforestation purposes

RECOMMENDATION: Provide financial and technical assistance to nurseries as necessary to mitigate expanded production costs associated with changes in air quality regulations such as soil fumigation.

**II. Identification of forest-climate adaptation strategies and management practices: Specification of types of measures and interventions necessary to implement adaptation strategies subject to Statewide Assessments.** Adaptation measures should be identified for climate impact issues as contained in the State Assessment and Resource Strategy. To coordinate and implement some of those strategies, a program of "forest-climate adaptation management practices" should be established that provides assistance to forest landowners in the installation and management of such practices.

RECOMMENDATION: As part of the State Assessment and Resource Strategy, identify those measures necessary to accomplish forest-climate adaptation objectives.

RECOMMENDATION: Amend the Forest Stewardship Program (FSP) to include a featured component for implementing "forest-climate adaptation management practices." It is proposed that the Stewardship Program provide the administrative framework for providing technical assistance and developing implementation plans for non-industrial private forest landowners to install such practices. Plans and measures would bring attention to a national priority and qualify for Stewardship recognition in and of themselves.

"Forest-Climate Adaptation Management Practices may include the following:

- Afforestation/ reforestation that adapts or adjusts to either anticipated loss or opportunistic expansion of forest types, particularly within landscapes subject to high fragmentation
- Afforestation/reforestation that utilizes specific genotypes selected for adaptation resiliency as well mixed species plantings and agro-forestry
- Silvicultural measure such as thinning, timber stand improvement, release etc. that prevents, minimizes or takes advantage of climate stressors that otherwise improves forest sustainability
- Measures that minimize or prevent insect, disease or invasive infestations that might be accelerated by changes in climate
- Measures that improve forest stand resilience and ability to recover from storm damage associated with changes in climate
- Measures that minimize impacts of drought associated with climate stressors
- Measures that improve water quality/quantity and related forest hydrology functions otherwise stressed by climate change including but not limited to riparian buffers and modifying stand densities to adapt to soil moisture dynamics
- Measures that facilitate adaptation of wildlife to climate-induced change in forest habitat including establishment of migration corridors

- Measures to reduce increased risk of fire or otherwise successfully manage fire-dependent forest ecosystems influenced by climate-stressors
- Assignment of priority for forested areas that may buffer or protect high value resources such as public water supplies
- Measures that improve resistance and adaptation to climate related changes in air quality and related deposition such as nitrogen, ozone, and acid rain
- Measures to protect and maintain potential genotypes that express adaptation to climate stressors
- Measures employed across contiguous forest landscapes that collectively achieve diverse ages classes, species mix, stand structure and other characteristics that assist in adapting to changes in climate

RECOMMENDATION: Promote and take measures to improve administrative procedures that facilitate contracting, grants, inter-agency coordination, and partnership relationships to achieve implementation of "forest-climate adaptation management practices."

RECOMMENDATION: Enhance and expand forest fire protection capabilities provided by the State Fire Assistance Program to address consequences of climate change as specified in the State Assessment and Resource Strategy.

RECOMMENDATION: Provide expanded or project-specific funding for Urban and Community Forestry Program grants that accomplish high priority adaptation and mitigation projects as identified in the State Assessment and Resource Strategy

RECOMMENDATION: Include specific provisions within the recently authorized Emergency Forest Restoration Program for adaptation measures that respond to restoration opportunities following landscape level disasters

**III. Cost-share and incentives to promote adoption of forest-climate adaptation management practices**. It is proposed to provide dedicated or specified funding for implementation of forest-climate adaptation management practices. Such funding may be from new sources and/or administratively designated and allocated for such purposes from existing programs as might be appropriate. In addition to cost-share, incentive payments should also be considered, particularly for commitments to adaptation measures that may not be associated with cost recovery.

RECOMMENDATION: Consider allocating dedicated funding for forest-climate adaptation management practices from existing programs such as Environmental Quality Incentives Program, Conservation Reserve Program, Conservation Security Program, Conservation Innovation Payments, Cooperative Conservation Partnerships, Wildlife Habitat Incentives Program and other appropriate sources. Based upon an approved Stewardship Plan, a forest landowner would qualify for funding from some or all of the respective programs.

RECOMMENDATION: Establish dedicated funding for forest-climate adaptation management practices as might be developed through cap-and-trade carbon auction revenue stream legislation.

RECOMMENDATION: Provide a tax credit or other tax relief measures with appropriate roll-back provisions for forest-climate adaptation management practices that provide long term, high value adaptation benefits, e.g. maintaining forest cover in a specified condition to protect public water supply.

**IV. Retention/ expansion of forest cover as part of mitigation strategies**

In addition to adaptation strategies it is proposed to develop and enhance programs and incentives that promote retention and expansion of forest cover to mitigate the impacts of forest-climate stressors. Such measures are considered to have mitigation value whether or not carbon offset legislation is established and also help achieve national priorities for advancing forest ecosystem benefits.

RECOMMENDATION: Expand funding for Forest Legacy and Healthy Forest Reserve Programs and place priority on projects that help mitigate the impacts of forest-climate stressors as identified in State Assessment and Resource Strategy Plans.

RECOMMENDATION: Fund the Community Forest and Open Space Program as authorized in the recent Farm Bill. Place a priority on projects that mitigate impacts of forest-climate stressors as identified in the State Assessment and Resource Strategy Plans.

RECOMMENDATION: For forest lands that provide high mitigation value as specified in the State Assessment and Resource Strategy (particularly in areas subject to high rates of deforestation and critical values at risk), provide tax relief measures with appropriate roll-back provisions for landowner commitments to maintain land in forest cover.

RECOMMENDATION: Evaluate the opportunity to utilize Qualified Forestry Conservation Bonds as authorized in the recent Farm Bill for high priority mitigation projects as identified in the State Assessment and Resource Strategy.

**V. Cap-and-trade legislation and role of forests in potential carbon markets**

RECOMMENDATION: Expand the purposes and provide adequate funding for the Forest Products Marketing Program (Sec 2112-Cooperative Forestry Assistance Act) to advance the role of durable wood products in national carbon sequestration strategies

RECOMMENDATION: Promote the development of woody biomass energy sources and initiatives such as the Community Wood Energy Program where biomass substitution for fossil fuels has a net benefit for carbon and is sustainable.