

Alaska Division of Forestry State Forest Action Plan

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Executive Summary

This five-year State Forest Action Plan has been developed to meet both federal and state expectations. Issues identified in the Statewide Assessment of Forest Resources regard wildfire; sustainable forest products; forest health protection; community benefits from trees and forests; ecosystem services; and cross-cutting issues. This action plan identifies performance outcomes to assess progress for the six issues. This action plan then describes how federal-state cooperative programs will address these issues and includes performance measures for these programs.

Goals for programs are as follows:

Wildfire & Public Safety:

- Plan for expanding wildland urban interface and associated challenges for fire management.
- Plan for difficult fuel types resulting from spruce bark beetle epidemic.
- Plan for longer fire season and increased fire intensity resulting from climate change; mega fires.
- Maintain capacity to manage wildfire and mitigate damage and risks from wildfire.

Forest Health Program:

- Provide early detection and response to invasive forest pests.
- Mitigate impacts of damaging pest species (insects, pathogens and plants).
- Adapt management to changing climate with uncertain and varying scenarios.

Community Forestry Program:

- Support community development that maintains and enhances benefits provided by trees and forests.
- Protect and improve environmental services provided by community trees and forests.
- Build community forestry program capacity at the local level.
- Build a sustainable and effective state program.

Forest Stewardship Program:

- Develop Strategies for expanding Wildland Urban Interface and associated challenges for fire management.
- Provide for effective second growth forest management including roads.
- Support development of biomass energy in Alaska.
- Address land transfers, forest conversion and demographic changes in program and plans.

- Meet increasing demand for fire wood for home heating.
- Contribute to the Governor's climate change subcabinet recommendations for carbon sequestration.
- Support cost effective habitat management for commercial, subsistence and sport uses.

National Priorities Section – Update Report

State Of Alaska 2015

The 2008 Farm Bill, under Title VIII – Forestry, amends the Cooperative Forestry Assistance Act of 1978, to include the requirement that each state develop a long-term, state-wide assessment and action plan for forest resources. These assessments and actions focused on three national priorities:

- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses
- Protect Forests from Threats
- Enhance Public Benefits from Trees and Forests

These documents were developed with a comprehensive team of stakeholders to address cross-boundary, landscape scale actions that would be the most efficient activities to address issues of concern developed for the assessment phase of the Forest Action plan.

This document serves as a record of activities taken by all Alaska stakeholders to address strategic actions taken as part of Alaska’s Forest Action Plan and will be updated annually.

Please note: Supplemental language provided in the 2014 Farm Bill as signed on February 7, 2014 indicates additional coordination requirements. In subsequent reporting, accomplishments with these partners should be included. Section 2A(c)(5) reads; *“as feasible, appropriate military installations where the voluntary participation and management of private or State –owned or other public forestland is able to support, promote, and contribute to the missions of such installations”*.

Introduction

From federal guidelines, the purpose of the Statewide Forest Action Plan is to provide a long-term, comprehensive, coordinated strategy for investing state, federal, and leveraged partner resources to address management and landscape priorities identified in the a Statewide Assessment of Forest Resources. The action plan is to cover priority landscapes, address means of accomplishing national objectives and themes, identify partners and stakeholders, identify monitoring strategies, and describe performance measures.

The Alaska Division of Forestry developed a Five-year Strategic Plan in 2008, which states that the Division of Forestry mission as:

We proudly serve Alaskans through forest management and wildland fire protection.

The Division of Forestry Strategic Plan emphasizes personnel management, use of technology, and cooperative relationships. The strategic plan establishes timelines and staff assignments, and identifies action items.

This Statewide Forest Action Plan:

- Compliments and elaborates on the division's strategic plan.
- Builds on issues identified and refined through a stakeholder public process.
- Describes strategies for achieving ongoing goals and also seeks to address new and evolving issues and new technologies.
- Describes actions for state mandated programs and federal cooperative programs.
- Addresses personnel management, public and stakeholder involvement, and collaboration with partners.
- Describes how the division of forestry will contribute to U.S. Forest Service State and Private Forestry themes: Conserve Working Forest Lands; Protect Forests from Harm; and Enhance Public Benefits from Trees and Forests.

Statewide Assessment Key Issues

A primary outcome of the Alaska Forest Resource Assessment was the identification of six key issues that help frame the integrated delivery of a diverse set of federal and state forestry programs and also serve to help define the priority landscape to guide delivery of these programs. This statewide strategy is organized by key programmatic resources with a set of goals and strategies developed and derived from each assessment issue. For each strategy the state and federal programmatic resources required by the State Forester, targeted partners and the national themes addressed are outlined in the attached matrix.

Issue 1: Expanding wildland urban interface, climate change, hazards, and decreased capacity

Alaska is a leader nationwide in that it has an Alaska Interagency Wildland Fire Management Plan that prioritizes landscapes for fire suppression resources statewide for all ownerships, public and private. Fire suppression for all wildland fire suppression agencies in Alaska is guided by the Alaska Interagency Wildland Fire Management Plan. The plan was developed and signed in the 80s to provide a coordinated and cost effective approach to fire management on all lands in Alaska. The plan dictates the shared management prioritization of initial attack resources by designating four protection levels for response to wildland fires. Other wildfire issues in Alaska include community wildfire protection plans, wildland urban interface, State land disposal, spruce bark beetle epidemic, climate change, mega fires, geographical-social-political conditions, employee retention, and contractual costs.

Issue 2: Maintaining and expanding sustainable output of forest products

The forest products industry has been a major part of the economy of southeast Alaska since the 1950s. Reductions in federal timber sales, coupled with large mill closures, have greatly diminished the industry. While some stakeholders and federal policy makers are calling for a rapid transition from a forest products industry dependent on old growth timber supply from the Tongass National Forest, second-growth forests are simply too young to become commercial in significant quantities for several decades. Alaska is at risk from losing what little remains of its industrial infrastructure to support southeast Alaska communities and also provide the tools for desired restoration and wood energy initiatives.

Alaska's interior has supported a modest, but stable, forest products industry for local uses. Currently, very high fossil fuel costs are causing great interest in wood energy for both urban and rural residents. The demand for energy resources is creating new opportunities to more fully utilize forest resources and develop a more fully integrated forest products industry. In many areas the lack of any forest products industry infrastructure is a significant barrier to implementing biomass energy projects.

Issue 3: Reducing threats and impacts to forest health

The condition of forest health in Alaska is assessed, compiled, and published annually. Due to the size of Alaska, much of the assessment is by aerial survey. The coastal forests of south-central and southeast Alaska experience periodic disturbance from several forest pests, particularly spruce beetle (*Dendroctonus rufipennis*) and Ips engraver beetles (*Ips spp*). Spruce aphid, spruce budworms, black-headed budworm, and numerous root and stem rots cause growth loss but usually not tree mortality. Yellow-cedar decline has been a long-term perplexing phenomenon in the southeast Alaska forests. The boreal forest of Alaska's interior region has been less affected by this major spruce-killing species. Northern spruce engraver (*Ips perturbatus*) has become more prominent than the spruce beetle, especially over the last 20-30 years in Alaska's interior spruce forests. Climate change is expected to affect Alaska's forests. Changes in the health of Alaska's forests are expected because both the living components of the ecosystem, such as trees and insects, and non-living components, such as fire, respond to both short- and long-term changes in climate.

Issue 4: Enhancing community benefits from trees and forests

Alaska is home to 686,000 people. Although there are many small villages across the state, more than half of the population lives in the Municipality of Anchorage or the Matanuska-Susitna Borough. Over 60 percent live in towns with populations above 5,000. In many Alaska communities forests are comprised mostly of forest types that existed prior to community settlement. As Alaska's communities have rapidly grown in and around forests over the past 50 years, some forests have been intentionally preserved in parks and green belts, some trees have been retained in more developed public and private lands, and some areas have been cleared with various levels of landscape management following development. Two levels of management by communities are recognized--communities with established programs to manage their community forest, and communities that are developing programs to manage their community forest. Established management programs are those that have met all four standards for an effective program. Those developing programs have met at least one but not all four standards. The increasing level of community forest management is a notable trend in Alaska.

Issue 5: Maintaining or improving output of ecosystem services

Alaska public and private forest lands provide a host of ecosystem services, both near communities and population centers as well as in remote areas. Alaska's forests contribute to the high quality habitats that produce world renowned salmon fisheries that have significant economic, social and ecological value. These fish support commercial, sport, personal use and subsistence fisheries. Alaska has an estimated 71,498 miles of catalogued anadromous fish streams, 27,172 miles of which fall within the assessment priority landscape. These streams support five species of pacific salmon in migration, spawning and rearing stages of their life cycle.

Many non-timber products can be harvested from Alaska's forests. For many years non-timber forest products have been recognized as forest outputs. In recent years the industry has grown both internationally and in the United States. In Alaska these forest products include herbs, sap, mushrooms, berries, and materials for crafts and decorations. Bird populations and habitats are important ecological components, help control damaging insects, and provide viewing opportunities for tourists and residents.

Climate change is expected to impact many aspects of Alaska. Regarding Alaska forests, climate change may affect wildfire, insect epidemics, invasive species, regeneration and growth, and wildlife habitat. The governor established a Climate Change Sub-Cabinet in 2007. The sub-cabinet subsequently convened advisory and working groups to provide analysis and recommendations.

Issue 6: Non-spatial cross cutting issues

In the process of developing the core issues and themes, several issues and needed strategies reoccurred regardless of the particular issue or geographic area involved. These cut across issues and programs, and have been categorized as “cross cutting issues”. These non-spatial elements, common across a broad range of issues and programs, include: the need to maintain public support for forest management (social license); the need for better data and information; challenges in maintaining state, federal and private management capacity; and the unique geographic, social and political challenges in Alaska.

The Division of Forestry Strategic plan is structured toward non-spatial issues. Important strategic plan elements include workforce recruitment, retention, and training; developing cooperative relationships; and development of equipment, technology, and emerging issues. The importance of non-spatial topics became evident during both during strategic plan development and the stakeholder public process. Although not captured geospatially, cross-cutting issues are considered essential in successful implementing all program strategies.

Programmatic Resources and Strategies

The following programmatic resources are required by the State Forester to address the issues and national themes as identified in the Statewide Assessment. Each program description identifies those assessment issues and national themes addressed, and other programmatic resources that may be employed to further efforts to address issues and themes and meet stated goals in a multi-program integrated approach.

State Fire and Aviation Program

National Guidance

The Rural Fire Prevention and Control, Enhanced Community Fire Protection and Management Assistance, Planning Assistance and Technology Implementation programs were established by Congress in the Cooperative Forestry Assistance Act of 1978. These funding streams are commonly referred to as State Fire Assistance & Volunteer Fire Assistance. These programs are administered by the US Forest Service and delivered by State Foresters for the purpose of providing coordinated and cooperative Federal, State and local participation. The emphasis is prevention and control of rural fires, broadening existing fire protection on non Federal forest lands, meeting multiple use objectives of landowners. Financial, technical and related assistance is provided to State Foresters for the development of stronger and more efficient state organizations will enable them to fulfill their responsibilities for the protection and management of non federal forest lands.

State of Alaska Fire & Aviation Management Program Description

Alaska Division of Forestry's Fire and Aviation Management Program, augmented with state and volunteer fire assistance funding from the U.S. Forest Service improves fire prevention and suppression and their impacts to communities. The intent is to actively respond to wildland fires while ensuring sufficient firefighting capacity for the future. Forestry's fire managers deliver a coordinated, efficient, uniform response complying with national safety and training standards that ensure state and local crew deployment to state and federal fires. In addition, they may also respond to other types of emergency situations, hazard assessments, fuels treatment projects and public education efforts.

Fire management efforts are directed at interagency activities such as coordinating with federal and local government on wildfire preparedness, fire risk planning, and allocation and distribution of tactical resources. There is also a significant undertaking in the Wildfire Decision Support System (WFDSS) input, cooperative agreements, annual operating plans ,burn suspensions and bans, media and political interface, safety, accident investigations, Occupational Safety and Health Administration (OSHA) standard compliance, interagency fire

readiness inspections, air attack, predictive services, support of interagency incident management teams, federal grant accountability and compliance, and conservation education as it relates to wildland fire management.

Investments are made in training, workshops, and conferences to meet national training and safety standards for state and federal firefighters. Fire readiness is also assured by training emergency firefighters and local government to national standards. Training is a cooperative effort each spring with Forestry's federal and local partners to deliver a broad spectrum of fire training classes that meet targeted allocation of forces for incident management teams. It also provides single resource, OSHA, fire line safety and recurrency training to maintain a qualified workforce.

Alaska Division of Forestry assists communities with Community Wildfire Protection Plan (CWPP) development. Fire managers also conduct wildfire hazard assessments of communities and partner with community leaders on mitigation planning and hazard fuel project prioritization.

Statewide interagency Firewise, prevention and education programs are supported year round. Educational efforts include participation at public events , conferences, information booths, school programs, Project Learning Tree's Fire in Alaska program for educators, online burn permit system, Firewise Communities/USA program, Firewise home assessments and land owner cost share grants for hazard fuel and danger tree removal. The Alaska Wildfire Coordinating Group's (AWFCG) Prevention and Education Committee focuses their efforts on developing public service announcements, key messages, Firewise Alaska booklets, and prevention message for statewide distribution. Local governments have been actively engaged in prevention, education, CWPP development and mitigation efforts for over a decade. These valuable partners leverage the efforts and funding of state and federal suppression agencies in raising awareness in communities throughout the state.

The division looks to continually invest in technology that is of direct efficiency and cost benefit to the wildland fire program. This includes computer aided dispatching, statewide fire reporting, two way radio for fire line communication, Canadian Forest Fire Danger Rating System (CFFDRS), and GIS for fire intelligence, planning, situations and hazard fuel mapping. These are just a few examples of the efforts and risk management tools supported by State Fire Assistance funding.

Volunteer fire departments are empowered with pass through grant funding and Federal Excess Property Program (FEPP) equipment. These rural and urban interface communities need assistance in meeting both existing and expanded fire suppression responsibilities. Rural fire departments represent the first line of defense in coping with fires and other emergencies in rural areas and rural communities. A common grant application is used for VFA & RFA (rural fire assistance) funding. Funding is awarded to volunteer fire departments by an interagency committee each spring to distribute funds evenly across the state and avoid duplication of efforts with our federal partners. Each year requested funding out strips the amount of funding

available; a testament to the success and strength of the program. Alaska State Forestry also invests volunteer fire assistance funding in refurbishing and transforming FEPP vehicles into engines for VFD use in rural, outlying areas of the state.

Alaska Interagency Planning & Coordination. The Alaska Interagency Fire Management Plan (AIWFMP)) gives land owners and suppression agencies a ready made tool to restore fire adapted ecosystems in the state and contribute to the long term sustainability and health of the forests. This plan by its very nature identifies high priority forest ecosystems and landscapes by delineating what level of suppression they receive based on values at risk. Fire is allowed to take its natural progression in Modified and Limited management options. Critical and Full management options provide for full suppression in high priority and at risk landscapes. The fire plan can be adjusted to move landscapes into Modified or Limited suppression management options. Conversely lands designated as Limited or Modified can be moved into Critical or Full suppression management options. The AIWFMP is reviewed annually to incorporate changes to the plan. This flexibility is especially important as wildland urban interface areas of the state continue to expand. We can also adjust to such factors as climate change or the devastating effects of the spruce bark beetle epidemic that have decimated the Kenai Peninsula.

Lands that are in the Critical and Full management options are not likely to ever to receive a reduction in protection level. This is due to the proximity of homes, businesses, infrastructure, the Trans-Alaska oil pipeline, cultural sites, watersheds, river corridors, high value timber or ecologically important forest landscapes. Managers need to use a variety of tools to reduce the risk of wildfire impacts and restore fire adapted lands. Forested lands in Modified and Limited protection options on public lands must be separated from private lands by alternative methods (thinning, shear blading etc.) to protect private values from encroaching wildfire.

The Alaska Wildland Fire Coordinating Group (AWFCG) serves as focal point for State of Alaska Fire Management Program input. AWFCG provides a conduit for broad scale interagency cooperation and implementation of a variety of strategies to reduce risk from wildland fire and to restore fire adapted ecosystems. AWFCG membership consists of: Alaska Department of Environmental Conservation, Alaska Department of Fish & Game, Alaska Department of Natural Resources, Department of Interior (DOI) Bureau of Indian Affairs, DOI Bureau of Land Management, DOI National Park Service, DOI Fish & Wildlife Service, USDA Forest Service, Chugachmuit, Association of Village Council Presidents, Tanana Chiefs Conference, and Anchorage Fire Department. It is through these stakeholders that statewide programs, strategies and goals reach a broad cross section of cooperating agencies. Continued active participation in the AWFCG and its committees will aid in implementing strategies that advance national strategic objectives and redesign themes.

National Themes

1. Conserve and manage working forest landscapes for multiple values and uses will be

addressed by investing in risk management tools and maintaining capacity to manage wildfire and mitigate damage and risks from wildfire.

2. ***Protect forest from threats*** will be addressed by reviewing and modifying Alaska's wildland fire management policy and selected wild land fire management practices.
3. ***Enhance public benefits from trees and forests*** will be addressed by assisting communities with CWPP development and revision. These plans will then be utilized to promote Firewise and other risk reducing policies and actions.

Specific strategies the Fire and Aviation Management Program will take in the next five years (2015 through 2019) to address these themes, issues and threats are described below.

Goals and Program Strategy

Assessment Issue 1. Expanding Wildland Urban Interface, Climate Change, Hazards, and Decreased Capacity. Four goals are identified.

Goal - Develop strategies for expanding wildland urban interface and associated challenges for fire management.

Strategies

- Empower, encourage and assist communities with Community Wildfire Protection Plan (CWPP) development and revision.
- Evaluate and revise Communities at Risk (CAR) list with interagency partners.
- Develop a comprehensive fuels management program to treat high risk areas through fire and mechanical fuel treatment, to minimize negative impacts of wildland fire on humans and to increase beneficial aspects for fire, especially to wildlife habitat.
- Review and modify as appropriate, Alaska's Wildland Fire Management Plan to address the escalating need for wood energy in rural communities.
- Plan and conduct integrated projects in forest management, fuels reduction, biomass energy and access.
- Develop and disseminate to the public prevention and Firewise education materials and programs in collaboration with interagency partners and stakeholders.
- Promote Firewise Communities/ USA program and add additional communities.
- Use modern technology to expand outreach, increase information exchange and promote partnerships with rural Alaskan communities.
- Sponsor information & education booths and/or provide information, education and training in CWPP development, hazard fuel reduction, firewise concepts, wildland fire prevention.
- Provide Wildland Urban Interface (WUI) grant opportunities at statewide conference events targeting rural Alaskans.

- Strengthen ties between cooperative forestry, university, fire management, and forest management programs on issues of mutual interest, e.g. firewise, climate change, invasive species, etc.
- Educate sister state agencies and general public about fire risk and mitigation on state disposal lands.
- Encourage the adaptation of regulations and ordinances to minimize fire risk.

Performance Outcomes

- Number and percentage of communities at risk covered by a CWPP.
- Bi annual updated communities at risk list.
- Annual number of Firewise Home Assessments.
- Number of new and renewed Firewise Communities.
- High risk areas /acres treated to minimize wildland fire impact on humans and increase beneficial aspects to wildlife habitat.
- Annual number of prevention education and Firewise presentations.
- Number of defensible space and prevention education publications distributed.
- Annual review of Alaska Interagency Wildland Fire Management Plan.
- Number of hazard fuel reduction projects /WUI grants projects that integrate multiple coop program objectives and promote collaboration with stakeholders.
- Number of public service announcements via media outreach.

Programmatic Resources Required

- State Fire Assistance
- National Fire Plan Assistance
- Alaska State Fire and Aviation Program
- Conservation Education
- Forest Resource Management
- Alaska Interagency Wildfire Coordinating Group
- Community Forestry
- Forest Stewardship
- Forest Health Protection

National Themes Addressed

- Protect Forests From Threats
- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses
- Enhance Public Benefits from Trees and Forests

Goal - Develop plans for difficult fuel types resulting from spruce bark beetle epidemic.

Strategies

- Market Online Burn Permit System to educate and inform public on safe burning practices, rules and regulations.
- Develop integrated public education and outreach approach for hazardous fuel reduction.
- Seek cross program funding opportunities for acquisition of high resolution geospatial data for priority landscapes.
- Improve Forestry's GIS capability. Provide training modules in GPS/GIS.
- Work with Kenai land managers to modify infected forest fuels on public lands and separate via mechanical methods or natural fire from private lands.

Performance Outcomes

- Number of Burn Permits Issued by type.
- Amount of geospatial data acquired at high resolutions.
- Annual number of collaborative Firewise and prevention education presentations.
- Number of collaborative and/or leveraged hazardous fuels mitigation projects on the Kenai Peninsula.

Programmatic Resources Required

- State Fire Assistance
- National Fire Plan Assistance
- Alaska State Fire and Aviation Program
- Alaska Interagency Wildfire Coordinating Group
- Conservation Education
- Community Forestry
- Forest Health Protection
- Forest Stewardship
- State Forest Resource Management

National Themes Addressed

- Protect Forests From Threats
- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses
- Enhance Public Benefits from Trees and Forests

Goal - Address longer fire season & increased fire intensity resulting from climate change; mega fires.

Strategies

- Review and modify as appropriate, Alaska's wildland fire policy and programs to address potential climate-induced increases in wildland fire frequency, size and geographic location.
- Review selected wildland fire management practices, including special consideration of tundra fires (above 68° N latitude), which have increased in the last two decades.
- Work with land managers to reassess fire management plan options and the impact on communities and ecosystem management.
- Develop and maintain known sites database for large fire risk assessment.
- Expand fuels mapping to allow for fire spread predictions and values at risk probabilities using FARSITE and Rapid Assessment of Values at Risk (RAVAR).

Performance Outcomes

- Number of decision making tools incorporated into strategic planning efforts; WFDSS, FARSITE, RAVAR.
- Number of known sites inventoried in database annually.
- Annual review of Alaska Interagency Fire Management Plan and fire plan updates.

Programmatic Resources Required

- State Fire Assistance
- Alaska State Fire and Aviation Program
- Alaska Interagency Wildfire Coordinating Group
- Predictive Services
- Forest Health Protection
- Forest Stewardship
- State Forest Resource Management

National Themes Addressed

- Protect Forests From Threats
- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses
- Enhance Public Benefits from Trees and Forests

Goal - Maintain Capacity to Manage Wildfire and Mitigate Damage and Risks from Wildfire.

Strategies

- Assess work force needs for all programs.
- Develop and utilize local government and non fire state agency response resources.
- Facilitate and increase mobility of personnel among offices where appropriate to accomplish priorities.
- Update policies and procedures to support efficient accomplishment of priorities.

- Allocate resources to efficiently accomplish priorities; crew rotation, how we build crews, emphasize IA certified crews.
- Establish training academies in remote hub communities to deliver advanced fire fighter, single resource and Incident Command System (ICS) training to enhance workforce development.
- Deliver assistance to equip and train Volunteer Fire Departments (VFDs) through the Volunteer Fire Assistance grant program and National Fire Plan VFA/SPS3 funds and Federal Excess Property Program (FEPP).
- Utilize the Northwest Compact and National Resource Order and Status System (ROSS) to obtain critical resources.
- Participate in all risk simulations and training opportunities.
- Continue sharing warehouse and logistical support in response to non wildfire incidents.
- Support and expand interagency dispatch opportunities.
- Assess equipment and facility needs.

Performance Outcomes

- Number of trained and / or certified fire fighters and crews.
- Number and type of resources obtained through the Northwest Compact and ROSS.
- Number of volunteer fire departments assisted with grants and FEPP equipment.
- Number of interagency fire readiness inspections conducted.
- Number of all risk simulations and cross training opportunities.
- Number of Type 2 IA crews.
- Number of Type 1 crews.
- Number of interagency dispatch centers.

Programmatic Resources Required

- State Fire Assistance
- National Fire Plan Assistance
- Volunteer Fire Assistance
- Alaska State Fire and Aviation Program
- Alaska Interagency Wildfire Coordinating Group

National Themes Addressed

- Protect Forests From Threats
- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses

Assessment issue 6: Cross Cutting Issues

Goal- Develop better data and information.

Strategies

- Seek cross program funding opportunities for acquisition of high resolution geospatial data for priority landscapes.
- Improve Forestry's GIS capability. Provide training modules in GPS/GIS.

Goal - Maintain state, federal, and private management capacity for fire and resource management.

- Assess work force needs for all programs.
- Strengthen ties between cooperative forestry, university, fire management, and forest management programs on issues of mutual interest, e.g. firewise, climate change, invasive species, etc.
- Facilitate and increase mobility of personnel among offices where appropriate to accomplish priorities.
- Participate in all risk simulations and training opportunities.

Forest Health Protection

National Guidance

The USFS forest health funding to DOF supports three primary purposes: 1) to conduct aerial- and ground-based forest pest surveys and provide technical assistance and pest assessments related to the surveys; 2) to conduct, and administer, forest pest prevention, suppression, restoration, and eradication projects; and 3) to monitor the health of Alaska's forests. All forest health projects are completed with matching funds and in-kind support that benefit the recipients of the forest health funding while providing both short- and long-term benefits to maintain forest health and resiliency of Alaska's forests. Under the base program, forest health projects are designed to provide forest pest survey and technical assistance and advice for monitoring, assessment, and mitigation of forest pests and forest health conditions on non-federal forest ownerships in Alaska. Treatments are designed to protect priority acres from damaging insects, diseases, and invasive plants; reduce the risks of mortality from wildland fire; protect highly valued sites; and also prevent future outbreaks by increasing the resilience of the vegetation in treated areas.

Forest Health Protection Program in Alaska

The State of Alaska's Forest Health cooperative program is currently administered by the Alaska Division of Forestry (DOF), Resource Management Section, Central Office within the Department of Natural Resources, in Anchorage. DOF's Forest Health program was established in 1990 with federal Cooperative Forestry assistance for DOF to address a spruce beetle epidemic in the Kenai Peninsula region in the late 1980s. Consistent with federal funding authority (Cooperative Forestry Assistance Act of 1978, Sec. 8, Forest Health Protection, as amended), DOF is the technical representative for the U.S. Forest Service in delivering the Cooperative Lands Forest Health Management program component within USFS, Forest Health Protection, Washington, D.C., administered by the Assistant Director, State and Private Forestry, Region 10 Alaska, Forest Health Protection in Anchorage.

Along with matched funding support, the USFS compact anticipates that a portion of the base forest health grant funds will provide ongoing forest health technical assistance and related forest health projects and surveys. Historically, additional DOF staff positions to provide technical forest health assistance have been dependent on year to year state budgets, but also special funding and grants from the USFS Forest Health Protection program and other federal partners (e.g., USDA APHIS/PPQ) to DOF for conducting specific operational forest health projects; also dependent on overall division staffing levels and existing FHP capacities (e.g., Kenai Peninsula Spruce Bark Beetle Management Project, USDA APHIS/PPQ *Monochamus*/Pinewood Nematode Survey Project, other specialized USFS/FHM funding for

Evaluation Monitoring projects, USFS Special Technology Development funding for northern spruce engraver spruce slash management, etc.). DOF works closely with R10 USFS/FHP to coordinate Alaska's overall forest health protection program across all ownerships. Depending on DOF staff capacity, program and project delivery for the annual Aerial Detection Survey, and also forest health research and evaluation projects across Alaska that address a specific pest or forest health issue, have been accomplished with combined DOF/USFS staff efforts. Other DOF Forest Health projects have been leveraged with a combination of special funding and the combined efforts of DOF, USFS staff specialists and other partners (e.g., USDA APHIS/PPQ, AKDNR Div. of Agriculture) to complete these forest health protection projects.

Since the early 2000s, DOF's Forest Health program, in cooperation with the USFS and other federal partners, has focused on development and expansion of an Early Detection and Rapid Response monitoring system for non-native, invasive insects; also, DOF is currently involved with the Forest Service National Insect and Disease Risk Map effort which is being used on a national scale to available federal forest health funding select insect and disease project locations for forest pest prevention and control work and aerial and ground survey techniques to identify pest suppression treatments. Treatment placements incorporate local priorities including wildland-urban interface areas, high-value timber stands, special wildlife habitat concerns, municipal water supply areas, outdoor recreational sites, and state administrative sites.

Program Delivery/Partnerships. The Alaska DOF Forest Health Program's primary goal is to provide useful and practical forest health information, forest pest control and mitigation advice and related forest health technical assistance to state and private forest landowners, land managers, and the public across Alaska.

Surveys, Assessments, Research. Delivery of the Forest Health Program in Alaska has been accomplished primarily by providing native forest pest and activity trend information derived from an annual forest damage aerial survey (ADS) completed with the USFS FHP staff, as well as on-the-ground forest pest activity information gathered by DOF forest health staff during the conduct of operational forest health projects, biological evaluations, client assists, etc. across Alaska. The lack of good access to most of the key population centers (and adjoining forests) necessitates that program delivery is completed primarily in response to forest health requests received, consistent with program budget and matched federal funds. Most technical assistance and advice is delivered electronically and via the internet (forest health data and reports hosted at DOF and USFS web sites), via the published annual Alaska FHP/Conditions Report with USFS, email, and client-requested site visits to assess a specific pest or pest outbreak situation. Supplemental grant funding available from "other federal" partners have enabled the Forest Health Program to conduct specialized non-native pest monitoring surveys, native pest surveys, bark beetle monitoring and control projects, bark beetle monitoring and trap-out with semiochemical attractants and pheromones, and a few special forest health projects to assist the wood export industry (Cooperative Agricultural Pest Survey "CAPS" funding from USDA, Animal & Plant Health Inspection Service and AKDNR, Div. of Agriculture;

USFS Forest Health Monitoring Evaluation Monitoring funding to conduct research on forest pests discovered during ADS surveys, etc.).

DOF has also conducted specific forest health research and special technology development projects jointly with R10 USFS FHP staff and other federal, and state, partners to identify *attractants and pheromones for native bark beetles, efficacy of pesticide treatments against native forest pests, impacts of forest pests in harvested/planted forest sites, and published results from Alaska's research and management of specific forest pests, such as the 1990s Alaska spruce beetle epidemic. Consequently, delivery and deliverables from DOF's Forest Health Program have been quite diverse over the past 20 years, in large part due to partnering efforts and leveraging of special forest health grant funding with the USFS and other federal cooperators.*

Cost-Share Program Delivery (Western Bark Beetle Initiative: Prevention/Suppression/FH Restoration grants). *In addition to DOF's base funding, funds are allocated annually from the USFS to western Regions specifically for western bark beetle prevention, suppression and restoration on National Forest System lands and on non-federal lands.*

Funds for bark beetle control and forest health restoration activities on "other federal lands" are allocated through a separate process directly from the USFS Chief's Office to the Department of Defense and the Department of the Interior and are not part of the funding available for "western bark beetles". Western Bark Beetle Initiative (WBBI) funds¹ are allocated to the USFS Regions based on two factors: previous years' tree mortality (regional detection surveys) and risk of mortality (National Risk Map). With the decline of spruce beetle populations in Alaska, particularly in the Anchorage area and on the Kenai Peninsula, the Alaska USFS Region's "fair-share" of funding is expected to be reduced in the future.

¹ Alaska Division of Forestry recently worked with USFS R10 FHP to identify new partners for WBBI funding within high priority bark beetle problem areas. Among these were Alaska Native groups, forestry consultants, and private entities. DOF distributed (via hard copy, electronic letter, and web postings) a Western Bark Beetle Initiative call letter and an application packet to over 85 Alaskan Native Corporate entities that have at least some forested acreage in their jurisdiction, including ANCSA "non-profits", Alaska Native consultants (list developed by DOF's Stewardship Program manager), and Alaska Native consortia that assist the Alaska Native groups with Forestry and Natural Resources development projects (e.g. Tanana Chiefs Conference Forestry Dept. representing: Doyon Regional Corp., Kuskokwim Corp., and Alaska Village Initiatives Inc.). The funding availability notices were followed up with an email reminder and phone calls were made to a few of the consultants and Alaska Native tribal entities that have been most actively involved with Alaska Native groups in the past 3-4 years.

This reformulated solicitation and advertisement strategy in 2009 netted a scenario such that the majority of the region's allocation will be effectively leveraged and utilized. New partners as a result of this effort: Salcha-Delta Soil and Water Conservation District; Palmer Soil and Water Conservation District and DOF's Kenai-Kodiak Area Forestry Office. Potential partner opportunities were identified that have forest management or natural resources development budgets and might be encouraged to partner with R10 FHP on future WBBI projects: Alaska Mental Health Land Trust; Tanana Chiefs Conference Forestry Dept. (Doyon Region, Inc.); Afognak Native Corporation; villages tied into the Alaska Village Initiatives, Inc. consortium; and several Soil & Water Conservation Districts with incipient bark beetle infestations and forest health restoration needs.

Other USFS program funds are available for matched grants to conduct biological evaluations and short-duration (1-3 year) research projects to answer questions discovered during “detection monitoring” efforts (during annual detection surveys, non-native pest monitoring, etc.). One program is via the USFS/FHP/Forest Health Monitoring Evaluation Monitoring program. Another program, administered by the USFS FHM/Forest Health Technology Enterprise Team and USFS regions across the West, addresses matched funding grants to USFS researchers and state partners to conduct special technology development projects that provide forest pest management solutions to real-world problems-an example of this deliverable will be guidelines for managing slash and bark beetle populations during timber harvest, fuels hazard reduction, right-of-way clearing, etc. in interior Alaska white spruce stands.

Forest Health Program Objectives. DOF’s Forest Health Program utilizes science, land management, and technology transfer expertise to restore and sustain forest landscapes – across urban, private, and State agency-owned/managed forests. These programs are designed to assist landowners in preventing, detecting, and suppressing insect, disease, and invasive plant outbreaks, making forest landscapes, and the communities that depend on them, more resilient to climate change. Funding allocations for forest health management projects are based upon level of risk as defined in the 2013 National Insect and Disease Risk Map (NIDRM), current pest locations and abundances, and other factors that include cost-effectiveness, probability of successfully implementing a treatment, and ability to conduct necessary environmental compliance. Forest health treatments are aligned with other staff activities (including annual coordination with USFS forest health staff), such as hazardous fuels, wood biomass and ongoing DOF forest management activities and projects. In addition, forest health projects are undertaken using an all-lands approach, working across land ownerships and leveraging funding with funding partners and key program cooperators whenever possible.

DOF Forest Health Program Key Objectives. Priorities for DOF’s Forest Health Program in Alaska, as outlined in the Statewide Assessment of Forest Resources document, include:

1. Target priority landscapes as identified in the Alaska Statewide Assessment and Strategy for Forest Resources. An exception to this overall program strategy will be and adjustment to address forest pest emergencies due to non-native pest introductions that occur outside targeted priority landscape areas;
2. Participate with the U.S. Forest Service Forest Health Protection staff to conduct the annual Aerial Detection overview survey (ADS) on 25-40 million acres of priority forest landscapes with appropriate ground assessment of forest pest conditions (DOF responsibility under USFS base Surveys & Technical Assistance grant addresses state and private lands on Alaska’s 127 million acres of productive forest lands);
3. Provide Forest Health Monitoring and Forest Health Management technical assistance and advice to State and Private forest landowners in Alaska, including mapping and GIS advice and assistance to Alaska’s Fire, Stewardship and Community Forestry program staffs and the Forest Health Program’s non-federal partners in cooperative projects (approximately 80% of this technical assistance is anticipated within the Alaska priority landscape area);

4. Conduct Early Detection and Rapid Response (EDRR) monitoring for economic non-native bark beetles and wood boring insects in the major population centers of Alaska- Anchorage, Fairbanks & Juneau (this is a cooperative effort with USFS, R10 FHP, ongoing since 2002; adjusted annually based on ongoing risk assessments in the priority landscape areas);
5. Conduct emergency forest pest prevention, pest suppression and forest health restoration (PSR) projects for DOF and its partners (via matching grants from USFS/FHP, Alaska DNR Div. of Agriculture, USDA APHIS/PPQ and other federal partners),
6. Conduct biological evaluations, forest health research, specialized forest health/forest pest surveys and provide sound native and non-native forest pest management advice and assistance to non-federal forest ownerships in Alaska; and
7. Coordinate, at least annually, with R10 USFS Forest Health Protection staff to discuss ongoing forest health projects, cooperative staff/cost efficiencies, cooperative forest health projects/research, and forest health project plans and activities that cross-cut with other Cooperative Forestry programs in Alaska.

National Themes

1. ***Conserve and manage working forests landscapes for multiple values and uses.*** Vibrant and resilient forest lands are more likely to remain in forested status due to the greater contribution of these forested landscapes to the economic well being of communities and ecosystem services. The forest health protection program helps identify and reduce threats and impacts to forest health.
2. ***Protect forests from threats.*** Protecting forests from harm is at the core of the forest health protection program. Targeting specific forest health funding, resources and technical assistance to state key private forest partners is a primary objective to address this theme. Leveraging available forest health funding with private landowners and key agency landowners/cooperators to address emerging threats from both native and non-native forest pests is critical to program implementation. Identifying and reducing threats and impacts to forest health is outlined in detail in the following goals and program strategies.
3. ***Enhance public benefits from trees and forests.*** The forest health protection program seeks to enhance public benefits from forests through identification and management of forest health risks. This helps protect, conserve enhance ecosystem services and other economic benefits and values of trees and forest.

Goals and Program Strategies

Assessment Issue 3: Reducing Threats and Impact to Forest Health

Goal - Provide effective early detection and response to invasive forest pests

Strategies

- Work with key partners and stakeholders to expand EDRR monitoring efforts on priority landscapes as additional non-native pest and pathogen introduction pathways are identified (will require focused funding from USFS and others to achieve, keeping in mind that the Forest Health priority landscape area may require future modification).
- Increase awareness and advertise potential pathways for introduction of potentially destructive urban invasive forest pests and pathogens into Alaska (e.g. Emerald Ash Borer in transported hardwood firewood and Alaska Milepost® advertising in coordination with R10 USFS FHP and other key partners).
- Analyze historical archived ADS data to increase staff efficiencies that direct pest and pathogen overview and ground surveys and assessments to priority landscapes across Alaska (note: analysis of ADS data for destructive forest diseases such as wood decays and dwarf mistletoe will be primarily from ground-based data since these agents are not detectable in aerial surveys).
- Expand Alaska's EDRR monitoring for non-native bark beetles and wood boring insects outside of Alaska's three major population/transportation centers in coordination with R10 USFS FHP.
- Expand the agency and citizen network with Alaska communities for early detection of damaging and invasive non-native forest pests and pathogens (this will involve close coordination with AKDNR Division of Agriculture to document non-native invasive plants detected within high priority landscapes across Alaska).
- Develop generic management guidelines for new forest pest and pathogen invaders (e.g., AKDNR Div. of Agriculture, U.S. Customs & Border Protection (HAS), USDA APHIS/PPQ).
- Maintain DOF's active participation on the Alaska Pest Risk Assessment Committee (key partners: U.S. Customs & Border Protection, Homeland Security Agency; APHIS, Plant Protection & Quarantine Agency; U.S. Forest Service, Forest Health Protection).
- Pilot an integrated native and non-native species information web portal for one-stop pest- and pathogen-outbreak tracking in coordination with USFS FHP.
- Pilot development and use of a system to digitally record and map invasive plant locations in Alaska in coordination with USFS FHP.

Performance Outcomes

- Forest pests under surveillance state-wide by annual forest pest aerial detection survey with appropriate ground assessment.
- Non-native bark beetles and wood boring insects minimized.

- Introduction pathways identified and managed to intercept new forest pest invaders.
- Web portal for one-stop pest information and pest outbreak tracking completed.
- System to digitally record and map invasive plant locations completed.

Programmatic Resources Required

- Forest Health program
- Cooperative Partners in State and Federal government
- USFS State and Private Competitive grants

Goal - Mitigate impacts of damaging pest species (insects, pathogens and plants).

Alaska's capability to assess overall forest health conditions, mitigate forest pest impacts and provide technical assistance and comprehensive reporting on potential impacts to the majority of its forest resources on an ongoing basis is challenged in a number of areas. These include limited accessibility to forest resources, small staff resources in relation to potential forested area at risk, lack of infrastructure and population to support economic development, and lack of current forest cover type and mapping data (including reasonable refresh of mapping and satellite-based imagery products) that are required to assess forest cover and vegetation to assess pest risks and hazards and construct pest damage estimates and trends. As stated previously, the USFS cooperative lands forest health base funding has generally not been sufficient to provide technical forest pest assistance and survey advice directly to all Alaska's non-federal forest landowners but has been leveraged with supplemental funding from the USFS, other federal partners, and other state partners, to complete a variety of forest health treatments, directed forest health research, technology development and forest health demonstration projects on priority working forest landscapes.

A positive benefit of this strategic goal is that program funding has been directed to the most critical areas for on-the-ground forest health treatments (special partner grant funding and matching cost-share projects) with more of a focus to use of electronic formats (web based information portals, GIS mapping portals, etc.) for delivery of the aerial survey and ground-based forest health information to landowners, key partners, and the public. Currently, available state and federal forest health staffs are not able to provide 100% coverage with the annual ADS survey of 25-40 million acres of Alaska's approx. 127 million acres of forested lands). Computer and GIS mapping technology is used to collect the forest pest activity information during the aerial surveys although accuracy of the collected data is limited by forest cover maps that are 60+ years out of date in most cases. The challenge, and a potential negative impact to DOF's current objectives, is that delivery of forest health protection services with appropriate staff and funding resources will not be promptly directed to some pest problems because they are either unknown or the forest data (e.g., accurate forest cover types, current mapping imagery) needed to assess forest pest management actions is unavailable.

Strategies

- Manage delivery of western bark beetle prevention, suppression and forest health restoration (“PSR”) projects via matching grants to qualified state and private Alaska landowners, including on-the-ground technical assistance to PSR grantees for some projects (i.e., dependent on DOF Forest Health Program staffing and resources capacities).
- Provide technical assistance to state and private managers, landowners and the public for management and control of invasive and destructive forest pests on priority landscapes (includes both native- and non-native species).
- Assist state and private landowners annually with PSR grant proposal development and provide technical coordination on approved projects for available western bark beetle prevention/suppression/forest health restoration matching grant funding. Funded projects will address immediate and emerging forest pest problems, primarily from native bark beetles.
- Explore additional opportunities in coordination with USFS to cost-share high priority western bark beetle funding with new partners in Alaska.
- Document all previously funded and future forest pest mitigation and forest health restoration treatments within the priority landscape areas identified in Alaska’s Forest Action Plan (develop database with R10 FHP staff).
- Research and develop techniques, individually and via grant funding with key partners, to more effectively monitor native and non-native forest insects, manage or mitigate native bark beetle populations during forest management activities, manage forest stands impacted by chronic tree diseases or pathogens, and similar projects that provide transfer of new forest pest management technologies to DOF and our Forest Health Protection Program clients (e.g., in conjunction with scheduled timber harvest, hazardous fuels reductions, biomass projects, forest thinning operations, rights-of-way clearing operations, etc.).
- Build staff capacity to deliver focused forest health/forest pest research and technology development projects for appropriate forest pest management technology transfer to non-federal forest landowners.
- Develop a more refined forest cover type map for Alaska for assessing both native and non-native pest invasive species risk in coordination with USFS FHP.

Performance Outcomes

- Technical assistance provided to land managers, landowners, and the public regarding invasive and destructive forest pests.
- Completed western bark beetle prevention/suppression/forest health restoration grants.
- Forest pest mitigation and forest health restoration treatments within the priority landscape.

Programmatic Resources Required

- Forest Health program
- Cooperative Partners in State and Federal government
- USFS State and Private Competitive grants

Goal - Adapt management to changing climate with uncertain and varying scenarios

Broad scientific evidence confirms that global climate change is real and the impacts are dramatically altering forest and the goods and services they provide. Climate change observations in Alaska have been related to past patterns of weather and climate, including estimates of fire and insect return intervals; also, regional differences in forest disturbance and climate regimes have been related to intensity of bark beetle epidemics (Berg and Anderson 2006²; Berg et al. 2006³). These observations have been documented by scientists and government agencies although the impact the changed climatic conditions will have to dramatically alter the composition of Alaska's forests may not be fully known for decades. Regardless, any significant changes in future climate warming, or cooling, will have some measurable impact on the future goods and services Alaska's forests now provide. A synthesis of current research suggests the impacts of climate change will be most pronounced in the boreal forest regions of North America citation (Chapin et al. 2006⁴). Many of the most urgent forest management problems of the past 20 years – wildfires, changing water regimes, and expanding forest insect infestations – have been driven, in part, by changing climate. Future impacts are projected to be even more severe. The majority of Alaska's approximately 710,230 residents are concentrated in the three main population centers of Anchorage, Fairbanks and Juneau, which are also surrounded almost entirely by forests that are a critical component in our response to climate change. Managing the health of Alaska's forests to better adapt to both current and future climates will help ensure that forests continue to produce needed goods and services, including carbon sequestration, which is believed to advance efforts to reduce global warming. The USFS, along with its cooperative and partnering relationship with DOF's Forest Health Program, has a long history of managing ecosystems to restore, maintain, and enhance

² Berg, E.E. and R.S. Anderson. 2006. Fire history of white and Lutz spruce forests on the Kenai Peninsula, Alaska, over the last two millennia as determined from soil charcoal. *For. Ecol. Manage.* 227(3):275-283.

³ Berg, E.E., J. D. Henry, C.L. Fastie, A.D. DeVolder and S.M. Matsuoka. 2006. Spruce beetle outbreaks on the Kenai Peninsula, Alaska, and Kluane National Park and Reserve, Yukon Territory: relationship to summer temperatures and regional differences in disturbance regimes. *For. Ecol. Manage.* 227(3):219-232.

⁴ Chapin, F.S., D. McGuire, R.W. Ruess, M.W. Walker, R.D. Boone, M.E. Edwards, B.P. Finney, L.D. Hinzman, J.B. Jones, G.P. Juday, E.S. Kasischke, K. Kielland, A.H. Lloyd, M.W. Oswood, C. Ping, V.E. Romanovsky, J.P. Schimel, E.B. Sparrow, B. Sveinbjörnsson, D.W. Valentine, K. Van Cleve, D.L. Verbyla, L.A. Viereck, R.A. Werner, T.L. Wurtz, and J. Yarie. 2006. Summary and synthesis: past and future changes in the Alaskan boreal forest. In: *Alaska's changing boreal forest*: 332-338.

their health and resilience to stress. Alaska’s relatively short “history” of managing specifically for forest health – less than 20 years – has necessitated development of a close partnership with the USFS FHP unit, for forest health management to appropriately address these recent landscape level forest health declines (e.g., recent spruce beetle epidemic). Future forest disturbances from both non-native invasives and also native forest pests will also need to be viewed through a climate change lens. Increased stresses from diseases, insects and invasive plants are also expected.

The DOF Forest Health Program has been working to develop a strategy to help set priorities and inform decisions in responding to climatic changes that will also force changes in Alaska’s forests. Changes in the overall forest health and resiliency of Alaska’s forests to withstand periodic forest pest “disturbances” will depend on understanding the effects of climatic changes to the forest. Part of this strategy is to partner and cooperate with USFS FHP staff specialists in Alaska to develop an invasive forest pest species strategy for Alaska’s forested areas. Relating overall forest landscape changes to climatic changes and that also affects populations, movements and distribution of both native and non-native forest pests, will require good science-based understanding of both plant pest and plant host responses to climate changes.

Responding to Climate Change. The Forest Service is developing a strategy to help set priorities and inform decisions in sustaining forest and grassland resources. The strategy will be based on 20 years of targeted research and a century of science and management experience on public and private forest and rangelands. Forest Service research and management experience has produced highly skilled and experienced land managers, internationally recognized forest and range scientists, and a body of peer-reviewed scientific information for developing responses to climate change. The DOF Forest Health Program can benefit by close coordination with the USFS to keep abreast of the latest science and management research addressing climate changes, forest pests and forests. Any DOF actions that address response strategies for adapting forest health management to changing climate scenarios will be coordinated with the State of Alaska Climate Change Subcabinet’s recommendations. A key goal will be to better integrate and leverage state and federal forest health resources (primarily staffs) to high-priority landscapes.

Strategies

- Continue DOF’s participation on key USFS national working groups and conferences related to bark beetle management and research (USFS Western Bark Beetle Technical Working Group), forest insect pest management (USFS Western Forest Insect Work Conference), and forest health monitoring (USFS Forest Health Monitoring Working Group).
- Maintain DOF Forest Health Protection’s capabilities for in-house mapping and GIS expertise to assist State of Alaska forest resource and fire managers and USFS FHP staff in reporting and analysis of the ADS forest damage data.
- Re-establish overall coordination of DOF’s Forest Health Program with forest health staff assistance in both Anchorage and Fairbanks to better align with USFS FHP’s Interior

Forest Health Unit staff and program (currently housed in DOF's Northern Regional Office in Fairbanks).

- Participate with USFS FHP in focused research, technology development, and related forest pest evaluation and monitoring projects utilizing available funding (e.g., USFS Special Technology Development Program grants, FHM Evaluation Monitoring grants, FHP EDRR Monitoring grants, etc.) that address both native and invasive non-native pest management in Alaska.
- Investigate how available Western Bark Beetle Initiative funding could be used in landscape-scale forest health restoration projects with key partners in accordance with the USDA Secretary Vilsack's vision for America's forests (e.g., partnerships with Fire, Stewardship, and Community Forestry utilizing focused S&PF Competitive Grant funding).
- Develop an action plan that addresses "Monitoring on the Margins" for tree species threatened by climate change in coordination with USFS FHP.
- Refine the Alaska LANDFIRE ecological vegetation classification for a forest tree cover classification to assess forest pest risk at a landscape level in coordination with USFS FHP (this is needed since Alaska lacks high-resolution base satellite imagery that would be most appropriate for developing detailed forest cover type mapping).
- Develop a central GIS database within the Alaska Dept. of Natural Resources for maintaining Alaska's Statewide Assessment and Resource Strategy geospatial layers (e.g., ArcGIS geodatabase development and maintenance).

Performance Outcomes

- National working groups and conferences related to bark beetle management and research attended.
- Focused research, technology development, and related forest pest evaluation and monitoring completed.
- Western Bark Beetle Initiative funding for landscape-scale forest health restoration projects obtained.
- "Monitoring on the margins" action plan for tree species threatened by climate change completed.
- LANDFIRE ecological vegetation classification to assess forest pest risk completed.

Programmatic Resources Required

- Forest Health program
- Cooperative Partners in State and Federal government
- USFS State and Private Competitive grants

Assessment issue 6: Cross Cutting Issues

Goal- Develop better data and information.

Strategy

- Seek cross program funding opportunities for acquisition of high resolution geospatial data for priority landscapes.

Goal - Solve unique geographic, social, and political challenges in Alaska.

Strategy

- Use modern technology to expand outreach, increase information exchange and promote partnerships with rural Alaskan communities.

Performance Measures

- Number of acres treated as a result of an AKDOF-conducted or –administered forest health project (most on-the-ground forest health treatments are conducted via AKDOF-sponsored projects designed to prevent or mitigate populations of injurious forest pests or restore pest-impacted stands to a healthier condition resulting from the treatment).
- Number of new EDRR sites established for ongoing exotic pest monitoring by AKDOF or forest health program partners/cooperators.
- Number of new WBB grant program partners completing pest prevention, suppression or forest health restoration projects during the calendar year.

Community Forestry

Federal Guidance

The Urban and Community Forestry (UCF) Program was established by Congress to improve the condition and extent of community trees and forests in cities, suburbs and towns nationwide. It encourages states to provide information and technical assistance to units of local government and others that will encourage cooperative efforts to plan urban forestry programs and to plant, protect, maintain, and utilize wood from, trees in open spaces, greenbelts, roadside screens, parks, woodlands, curb areas, and residential developments in urban areas. Urban and Community Forestry is broadly defined as the comprehensive management of forests and related natural resources in populated areas. These include the inner city, the developing fringe of cities and towns, and communities of various sizes. UCF management integrates natural, social, and economic systems as they affect and are affected by human activity.

The purposes of the Urban and Community Forestry Program, as stated in the Cooperative Forestry Assistance Act of 1978 (as amended), are to:

1. Improve understanding of the benefits of preserving existing tree cover in urban areas and communities;
2. Encourage owners of private residences and commercial properties to maintain trees and expand forest cover on their properties;
3. Provide education programs and technical assistance to state and local organizations (including community associations and schools) in maintaining forested lands and individual trees in urban and community settings and identifying appropriate tree species and sites for expanding forest cover;
4. Provide assistance through competitive matching grants awarded to local units of government, approved organizations or other local community tree volunteer groups, for urban and community forestry projects;
5. Implement a tree planting program to complement urban and community tree maintenance and open space programs;
6. Promote the establishment of demonstration projects to illustrate the benefits of maintaining and creating forest cover and trees;
7. Enhance the technical skills and understanding of sound tree maintenance and arboricultural practices; and
8. Expand existing research and educational efforts intended to improve the understanding of tree and forest ecology; the value of trees and ground covers; economic, environmental, social and psychological benefits of trees and forest cover in urban and community areas; and the role of trees in conserving energy and mitigating urban heat islands.

The USDA Forest Service provides national leadership and coordination. State forestry agencies provide statewide leadership, direction, networks, program management, and

technical, financial, and educational assistance. The program relies on cooperation among agencies, local and tribal governments, the private sector, not-for-profit and community-based organizations, educational institutions, and the Forest Service to promote understanding and management of community forests and related natural resources. State UCF councils advise the State Forester on program direction and priorities.

Assistance provided, including conservation education, must focus on trees, forests, open spaces, greenbelts, and related natural resources, to include soil, water, air, and wildlife. Activities and projects that are authorized include the planning and management of trees, forests, open spaces, greenbelts and related natural resources in communities, including urban and urbanizing areas.

The Forest Service has set four basic performance requirements for states to receive federal funding, which may be met in a variety of ways to best meet state needs:

1. An urban and community forestry program coordinator
2. Volunteer/partnership coordination
3. An urban and community forestry council
4. A state program strategic plan (five-year plan)

Alaska Community Forestry Program

In 1991 the Alaska Department of Natural Resources joined the nationwide effort to help communities improve the condition of their trees and forests through effective management. The Division of Forestry, through a partnership with the Forest Service, receives federal funds to administer the state's Community Forestry Program. A full-time coordinator and community assistance forester provide technical and educational assistance to communities, tree care professionals, volunteer organizations, businesses, and universities.

The Alaska Community Forest Council helps determine goals and priorities of the program and provides expertise and advice to the Division of Forestry. The 15 members represent the geographic and cultural diversity of the state and a broad spectrum of interests and experiences. Supporting community forestry is an important and appropriate role for state government because:

1. Community forests provide essential benefits we cannot live without.
2. A healthy community forest doesn't happen by chance; it is the result of proper planning, management, and community investment.
3. Healthy community forests can help solve many community problems.
4. Community forests and rural forests are connected; good management of one helps the other.

The rapid population growth and development that has occurred in Alaska since 1990 makes it imperative that the Division of Forestry build a greater awareness of, and commitment to,

community forest management. Invasive species, urban/wildland fire, forest cover loss, urban sprawl, public health, water quality, air pollution, and climate change are just a few of the critical issues that community forestry positively addresses. A relatively small financial investment produces big dividends for communities and direct benefits to Alaskans. On a larger scale, when hundreds of communities expand and improve forests locally, conditions improve globally.

Mission. The mission of the Alaska Community Forestry Program is to: ***Help communities build effective, self-sustaining community forestry programs with strong local support.*** Community forest sustainability is measured by how well the network of trees, forests, and related natural resources contribute to human quality of life in cities and villages. Focusing program delivery on sustainable management can help solve landscape-scale problems that affect thousands of Alaskans: air and water quality, climate change, energy consumption, loss of resources to urbanization and fragmentation, and natural disasters.

The Alaska Community Forestry Program will focus its efforts on three areas of need. Each area requires a different approach and different kind and level of state service.

1. Communities that have initiated community forestry programs but need technical and financial assistance to survive and grow into sustainable and effective programs.
2. Communities with potential but currently no or limited management programs for trees and forests.
3. Communities where forest management is important to quality of life but local program establishment is unlikely due to the community's size, structure, or lack of resources.

The next five-year review of the Alaska Community Forestry Program is due in calendar year 2015.

National Themes

The Alaska Community Forestry Program will address these themes as follows:

1. ***Conserve and manage working forest landscapes for multiple values and uses*** will be addressed by increasing the number of sustainable management programs that protect, manage, and expand community forests.
2. ***Protect forests from threats*** will be addressed by assisting land managers to conduct inventories and develop and implement management plans and practices that address forest health, invasive species, fragmentation, wildfire, and other threats to forests.
3. ***Enhance public benefits from trees and forests*** will be addressed by assisting communities to protect and maximize ecosystem services provided by forests such as clean air and water, productive wildlife habitat, locally produced wood products and biomass, and recreation areas. Effective management provides a better return on the funds invested by local governments in trees and forests.

Goals and Program Strategy

Assessment Issue 4: Enhancing Community Benefits from Trees and Forests

Goal - Support community development that maintains and enhances benefits provided by trees and forests.

Objective 1: Assist communities in devising reasonable, affordable, and effective ways in which to grow, develop, and protect their communities while integrating the critically important contributions made by forest ecosystems and other natural areas.

Strategies

- Participate in local and regional planning efforts that impact or influence management of community trees and forests.
- Measure baseline tree canopy for the largest population centers using high-resolution imagery.
- Support efforts to calculate the structure, environmental effects, and values of community forests using computer-generated models.
- Encourage best practices for protecting high-value forest landscapes in and around communities.
- Help communities assess and prioritize forest landscapes based on the services and benefits they provide as intact ecosystems.
- Bolster research that quantifies economic and environmental benefits that community trees provide when they are appropriately sited, planted, and maintained.
- Provide technical assistance to communities for writing effective tree management/protection ordinances and policies.

Objective 2: Build support for community forestry among policy makers, community leaders, and the public.

Strategies

- Demonstrate how trees provide economic, environmental, and social benefits greater than their cost when they are selected, planted, and maintained appropriately.
- Bring public attention to successful community forestry projects, programs, leaders, and partners.
- Increase awareness of development practices that conserve critical forest land, habitat, and air and water quality in communities.

Goal - Protect and improve environmental services provided by community trees and forests.

Objective 1: Improve air quality.

Strategies

- Participate in process to develop plans for nonattainment areas that incorporate trees.
- Encourage voluntary or enforceable measures to increase tree canopy or prevent its destruction.

Objective 2: Improve water quality.

Strategies

- Support stream restoration programs in communities, with an emphasis on mitigation of impaired waterways, as defined by the Department of Environmental Conservation.
- Work with communities to protect high-value forest tracts along waterways.
- Encourage practices and standards that limit the amount of runoff and pollutants that enter water bodies.
- Analyze cumulative impacts and help communities establish targets for impervious surfaces.
- Promote best practices for redevelopment in areas that exceed targets for imperviousness.
- Work with local storm water utility managers and public works directors on policies that value the contribution of urban trees and forests toward storm water management.

Objective 3: Help communities establish large-scale tree planting goals and plans.

Strategies

- Support efforts to prioritize tree planting locations based on environmental benefits.
- Develop a tracking tool for communities to monitor progress towards achieving planting goals.
- Partner with electric utility providers to promote planting the right tree in the right place near utility lines.

Goal - Build community forestry program capacity at the local level.

Objective 1: Establish professional urban foresters and arborists positions in Alaska communities.

Strategies

- Offer UCF grants to sustain professional positions in high-priority communities.
- Create opportunities for professional development in urban forestry and arboriculture.
- Increase the number of Certified Arborists and Certified Municipal Specialists through the International Society of Arboriculture (ISA) statewide.

Objective 2: Support effective and sustainable local community forest management.

Strategies

- Secure data required to measure tree canopy, assess forest condition and extent over time, and to quantify environmental services provided by trees and forests.
- Offer grants and assistance to complete working tree inventories and develop workable management plans.
- Assist in development of effective local risk management programs for trees.
- Support development of effective tree care and tree protection ordinances and policies.
- Encourage the adoption and use of industry standards and best management practices.
- Promote Tree City USA.

Objective 3: Offer technical and educational services to private-sector nursery; arboriculture; and landscape design, installation, and maintenance firms.

Strategies

- Encourage local tree care companies to obtain ISA Certified Arborist and Tree Worker credentials and training.
- Offer tree safety and tree worker training classes in larger Alaska communities.
- Foster development of tree nurseries in Alaska and adoption of high standards for quality.
- Promote Tree Line USA.

Objective 4: Strengthen local community forestry citizen groups.

Strategies

- Help state and local non-profit and volunteer groups to develop capacity to deliver large-scale tree planting and maintenance projects.
- Provide education and assistance to local tree boards and tree non-profit groups.
- Aid in expansion of pool of community forestry volunteers.

Objective 5: Maintain and expand partnerships with universities.

Strategies

- Expand use of interns for community forest management and research.
- Support incorporation of urban forestry and arboriculture courses into Alaska university curricula.
- Promote Tree Campus USA program.

Goal - Build a sustainable and effective State community forestry program.

Objective 1: Engage a diverse set of partners who strengthen sustainable community forestry programs.

Strategies

- Maintain current and establish new partnerships to support community forest management and to provide education, training, and information.
- Expand communication and partnerships within the Division of Forestry, Resources, Fire, and Cooperative Programs, to meet common goals.
- Increase networking, communication, cross-training, and understanding among local governments, state and federal agencies, arborists, planners, landscape architects, engineers, and others who manage or impact community trees and forests.
- Maintain a strong, active, and diverse Alaska Community Forest Council.

Objective 2: Maintain professional staff and a sustainable budget.

Strategies

- Identify and pursue more diverse funding for state program administration, delivery, and grants.
- Keep current on state and national urban and community forestry issues, legislation, and practices.
- Produce a work plan and accomplishment report annually that implements the five-year strategy.

Assessment issue 6: Cross Cutting Issues

Goal- Develop better data and information.

Strategy

- Seek cross program funding opportunities for acquisition of high resolution geospatial data for priority landscapes.

Goal - Solve unique geographic, social, and political challenges in Alaska.

Strategy

- Use modern technology to expand outreach, increase information exchange and promote partnerships with rural Alaskan communities.

Performance Outcomes

- Communities develop and sustain programs to manage their community trees and forests to effectively and efficiently meet local needs.
- Communities are served by community forestry professionals and a professional tree care industry.

- Communities participate in tree planting and other conservation activities that contribute to the quality of life, the environment, and the economy.
- Communities have plans that mitigate risks and prepare for catastrophic events.
- Communities benefit from local forest management that helps conserve energy and provides local biomass as an energy source.

Performance Measures

- Federal guidelines for the CF Program detail requirements and measurements for activities funded by the U.S. Forest Service. The measures below are reported nationally each year. Funds from other sources will require other measures.
- Number of people and percent of state population living in communities managing programs to plant, protect, and maintain their community trees and forests.
- Number of people and percent of state population living in communities developing programs and/or activities to plant, protect, and maintain their community trees and forests.
- Number of people living in communities provided educational, technical, and/or financial assistance.
- Number of communities with active community tree and forest management plans developed from professionally-based resource assessments and inventories.
- Number of communities that employ, or retain through written agreement, the services of professional forestry staff to advise and/or assist in planting, protection, and maintenance of community trees and forest. Staff will have at least one of these credentials: (1) degree in forestry or related field and (2) ISA certified arborist or equivalent professional certification.
- Number of communities that have adopted and can present documentation of local/statewide ordinances or policies that focus on planting, protecting, and maintaining community trees and forests.
- Number of communities with local advocacy/advisory organizations, such as active tree boards, commissions, or non-profit organizations that are formalized or chartered to advise and/or advocate for the planting, protection, and maintenance of community trees and forests.
- Number of hours of volunteer service logged.
- State-offered community grant program in current fiscal year.
- Number of communities receiving financial assistance awarded in current fiscal year through a state-managed community grant program.
- Amount of federal (USFS) funding to state.
- Federal (USFS) dollar cost or expenditure per capita in communities assisted.

Forest Stewardship

National Guidance

The nationwide Forest Stewardship Program was authorized in the Forestry Title of the 1990 Farm Bill. The program is funded by Congress, administered nationally by the U.S. Forest Service, and delivered to local landowners by State Foresters. The Forest Stewardship Act provides assistance to State Foresters for “the delivery of information and professional assistance to owners of non-industrial forest lands. Such information and assistance shall be directed to help such owners understand and evaluate alternative actions they may take”.

In the Forest Stewardship Program—National Standards and Guidelines, the U.S. Forest Service describes the purpose of the Forest Stewardship Program as “to encourage the long-term stewardship of non-industrial private forest lands, by assisting the owners of such lands to more actively manage their forest and related resources”.

Alaska Forest Stewardship Program

Non-Industrial Forest Lands (NIPF). The Alaska Division of Forestry seeks to bring the benefits of a stewardship perspective to private forest landowners in Alaska and to contribute to national program goals. The Alaska Division of Forestry will provide technical information and financial assistance to private landowners in accordance with Alaska Stewardship Program priorities. Federal policy considers industrial private forests to be ownerships that are principally engaged in processing forest products. With lack of true industrial forest land in Alaska, non-industrial private forest land will be described as private forest land.

Alaska Native Corporations. Alaska Native Claim Settlement Act (ANCSA) corporations hold the majority of private forest acreage in Alaska and deserve significant Forest Stewardship Program support. Furthermore, serving these groups contributes greatly to national Program goals. The primary goal for ANCSA corporations should be to provide meaningful assistance rather than reach a numerical target. The major issues to be addressed with ANCSA corporations are second growth forest management, primarily in coastal Alaska, wood energy development, primarily in interior Alaska, and habitat management for subsistence species. Since 1991, 51 ANCSA corporations have completed Forest Stewardship plan covering 6,078,910 acres (Figure 1).

Many ANCSA Corporations in the coastal region completed timber harvest on their lands in the 1990’s and many have second growth forests today. These second growth forests often have densities far above optimum for individual tree and value growth. Thinning, pruning, and fertilization are silvicultural techniques that may be applicable. Thinning allows greater

diameter growth and hence lumber production. Thinning can also increase browse and hasten the time for the forest to have mature forest habitats. Thinning also allows modifying species composition in regeneration often dominated by western hemlock. Pruning the basal 8 foot log can produce a more knot free and valuable log. Forest fertilization has been used only very limited in Alaska, but is believed to have promise when combined with thinning. Forest fertilization has been used operationally in British Columbia and Pacific Northwest states for years.

Maintaining forest roads is needed on many ANCSA corporation lands that have completed timber harvest. Some roads can be de-commissioned, but many roads provide useful benefits. Roads are needed for silviculture practices, subsistence uses, non-timber forest products, permitted visitor activities, and fire control. If roads are not maintained, culverts and ditches can clog which can lead to erosion and mass wasting into streams. Clearing ditches and culverts, crowning road surface, re-forming water bars, and brush removal are often needed on in-active roads.

Communities in the interior and boreal forest are heavily influenced by the high cost of energy. Many ANCSA corporations in this region have shown interest in developing forest for biomass fuels. Currently, no adequate model for a rural village / biomass energy system is present. However, Alaska Energy Authority has funded design and construction for some biomass energy systems. Forest planning has been progressing through assistance of the Forest Stewardship Program, NRCS, and USDA-Rural Development. However, significantly greater assistance is warranted for imagery, inventory, GIS, and winter road engineering.

Reforestation on boreal forest sites can be problematic. Mechanical scarification or fire can be effective for natural regeneration, but winter logging can have little site preparation effect. Site preparation or planting nursery grown seedlings may be too costly for rural boreal sites. Planting poplar stem cuttings may be a low-cost method of biomass reforesting on winter logged sites. Furthermore, newly developed hybrid poplars from Canada may have sufficient cold tolerance for interior Alaska. Hybrid poplars grow substantially faster than parent types. In addition to providing energy, biomass harvesting may enhance moose browse by broadleaf regeneration, thereby enhancing subsistence opportunities.

Trust Lands. The Federal Office of General Council has determined that land trusts of the University of Alaska and Mental Health Trust are eligible for federal assistance in the Forest Legacy Program. The Office of General Council determined that these trust lands are very similar to private land; hence the Forest Service indicated this ruling should extend to the Forest Stewardship Program. Both trusts have forest land with past timber production, particularly in southeast Alaska. The Forest Stewardship Program will provide assistance to trust land managers similarly to ANCSA corporations over the upcoming five years.

Individual Landowners. Individual private landowners hold much less total acreage than ANCSA corporations but have potentially greater numbers. The Forest Stewardship Program has provided plans for 868 individual private landowners covering 45,718 forested acres since 1991

(Figure1). However, in upcoming 5 years, assistance to individual private landowners will be mostly limited to providing publications, referrals to partner agencies, and monitoring past plans. Defensible space planning and cost-share grants may continue as funding permits. Declining interest necessitates this change.



Figure 1. Forest Stewardship plans from 1991 to 2015.

Program Delivery. The following objectives will guide program delivery:

- The Forest Stewardship Program will be targeted to priority landscapes as identified in the Statewide Assessment of Forest Resources.
- Key issues for the Forest Stewardship Program, as identified in the Statewide Assessment of Forest Resources, will be second growth forest management, wood energy development, ecosystem services including habitat enhancement for subsistence species, and wildfire fuel reduction in the wildland urban interface.

- At current federal funding levels, significant federal Forest Stewardship Program funding will be available for grants to Alaska Native Corporations and trust landowners.
- Opportunities for supporting private sector resource professionals will continue.
- Monitoring of land management of Forest Stewardship program participants will be performed as required by the National Standards and Guidelines.
- A Geographic Information System tracking method for landowner locations and plan recommendations will be maintained and updated annually.
- Research and development for regeneration, nurseries, and genetic resources will be supported to improve forest management and forest planning.
- The Forest Stewardship Coordinating Committee will be convened approximately twice per year to review issues of the Forest Stewardship and Forest Legacy Programs.

Prioritization. The first level of prioritization will be the priority landscapes depicted in the Statewide Assessment of Forest Resources. The second level of prioritization will be landowners that can contribute to second growth forest management in the Coastal region or wood energy in the interior region. A third level of prioritization will be landowners that can contribute to hazardous wildfire fuel reduction within community wildfire protection plans boundaries.

Forest Stewardship Plan Standards. A Forest Stewardship Plan format will be maintained and modified as deemed necessary. The plan format will incorporate National Standards and Guidelines and local experience of the Alaska Division of Forestry. The format is intended to standardize plans and inform prospective participants about the scope and utility of Forest Stewardship Plans.

ANCSA Corporations and Land Trusts. Assistance will be primarily by providing grants to ANCSA corporations and trusts so that private professional resource services of the corporation's choosing can be obtained. Grants will be awarded to corporations demonstrating intent to develop a Forest Stewardship Plan by providing an acceptable project proposal. The grant amount will be determined by a rate schedule established in consultation with the Forest Stewardship Coordinating Committee. Grant terms and conditions have been standardized as part of procurement procedures of the Alaska Department of Natural Resources.

Due to larger acreage and complexity, Forest Stewardship Plan standards for ANCSA corporations and trusts may have elements not required for individual landowners. For new grant awards, a requirement for Geographic Information Systems (GIS) products will be sought. Expected GIS products will be digitized ownership boundary, USGS topographic map covering the ownership, vegetation classification at 50m resolution or finer, and geographic rectified imagery at 5m resolution or finer.

A concerted effort of outreach and assistance for ANCSA corporations and trusts will continue. Updates about Stewardship grant opportunities will be given in newsletters and mailings. Forest Stewardship promotional materials will be developed for distribution upon request. Revisions and updates of the Alaska Forest Stewardship web page will be conducted. All opportunities to describe Forest Stewardship planning and grants to Alaska Native leaders will be taken. Care will be taken to promote the program in an appropriate and welcomed manner.

Grants will be available to revise Forest Stewardship Plans if the existing plan is over 10 years old or conditions have significantly changed. Eligibility and funding amounts for plan revisions will be determined in consultation with the Forest Stewardship Coordinating Committee.

In addition to grants, additional planning services may be provided by the Forest Stewardship Program including:

- High resolution imagery, 1 m or finer, of some or all of an ownership.
- Ortho rectification.
- Civil engineering services to develop road system locations and identify planning design problems.
- Travel to investigate suitable logging equipment to be described in the Forest Stewardship Plans.
- Cost for forest inventory field crews.
- Cost for crews to conduct road condition surveys.
- Other procurements that may advance Forest Stewardship Plans.

Individual Landowners. In Alaska, individual forest landowners have been most concerned with protecting their homes from wildfire. A secondary concern has been damaging forest agents, particularly spruce bark beetle. Assisting landowners in understanding wildfire defense and damaging agents will be largely through providing publications, web sites, and referrals to partner agencies. Through these sources landowners can learn about threats and methods of mitigation.

As previously, Alaska forest landowners with 7 or more acres will be eligible for Forest Stewardship Program assistance. Residential homeowners with 2 or more acres in critical fire protection zones, as defined by the Alaska Wildland Fire Coordinating Group, will also be eligible for Forest Stewardship Program assistance. Alaska Native allotments are eligible for assistance, although few allotment owners have requested assistance.

Cost-Share Programs. Several cost-share programs may be available to landowners with Forest Stewardship plans, such as Wildland Urban Interface (WUI) grants or the NRCS Environmental Quality Incentives Program or Wildlife Habitat Incentives Program. Cost-share programs mostly support on-the-ground management action. No Forest Stewardship program funds will be used for direct on-the-ground cost-share payments to private landowners. Forest Stewardship Program funds may be used for personnel cost to administer cost-share contracts. Cost-share

practices and rates will be adjusted periodically in consultation with the Forest Stewardship Coordinating Committee.

Regeneration, Nurseries, and Genetic Resources. Silviculture research and development projects will be supported. Projects may include poplar and willow regeneration for biomass production, hybrid poplar development and field trials, site preparation testing, second growth forest thinning and fertilization trials, and seed testing and storage.

Monitoring. A system to monitor forest management activities of Forest Stewardship program participants has been developed and implemented. The monitoring system will incorporate national expectations with Alaska specific situations. A sampling method will be used to select properties to monitor. If some landowners decline to allow field monitoring, then other landowners will be selected. Activities on the properties will be assessed for consistency with Forest Stewardship plans. Properties will be rated as consistent with plans or not consistent with plans. Additional ratings may be developed as deemed necessary by the Forest Stewardship Coordinating Committee, State Forester, or U.S. Forest Service.

Records. Increasingly, land-based records are being maintained using Geographic Information Systems (GIS), the most widely used application being ArcGIS. GIS records may include aerial imagery, boundary maps of land parcels and forest types, and written information in attribute tables. The attribute table can record data and descriptive text associated with each land parcel. ArcGIS will be used to record Forest Stewardship plan location and associated information. ArcGIS will also be used for plan monitoring and cost-share practice records.

Forest Stewardship Coordinating Committee. A Forest Stewardship Coordinating Committee (FSCC) has been active in Alaska since program inception. The FSCC will be convened and will be supported by travel and per diem. FSCC membership will follow the Forest Stewardship Act and National Standards and Guidelines to extent possible.

The FSCC will provide advice and suggestions to the Alaska Division of Forestry for implementing the Forest Stewardship Program in Alaska. Regular business considered by the committee may include accomplishment levels, Forest Stewardship plan requirements and grant amounts, cost-share practices and rates, important resource area or cost-share practice prioritization, State or National concerns of private forest landowners, and Forest Legacy Program proposals. The committee may be requested to evaluate and rank funding proposals when funds are insufficient to support all eligible requests. This may involve developing timeframes and criteria for evaluation of proposals. Other business affecting private forest landowners or the Forest Stewardship Program may be considered as appropriate. In committee recommendations, consensus will be sought rather than a voting majority. The FSCC will be asked to participate in program reviews conducted by the U.S. Forest Service and other agencies

The FSCC will usually hold semi-annual meetings in spring and fall. Additional teleconferences may be scheduled as needed. Occasionally a field trip will be scheduled in place of a meeting.

Announcements will be mailed several weeks prior to each meeting providing the date, location, time, and agenda. Meetings are open to the public, and persons expressing interest will be kept informed of meeting dates and agenda items.

National Themes

The Alaska Forest Stewardship program will address these themes as follows:

1. ***Conserve and manage working forest landscapes for multiple values and uses*** will be addressed by planning for sustainable management of private forest lands.
2. ***Protect forests from threats*** will be addressed by engaging private landowners in forest health and wildfire threats and presenting possibilities for mitigation.
3. ***Enhance public benefits from trees and forests*** will be addressed by connecting private landowners to information sources regarding wildlife habitat, water quality protection, wood energy potential, and silviculture possibilities.

Goals and Program Strategy

Assessment issue 1: Expanding wildland urban interface, climate change, hazards, and decreased capacity

Goal - Develop strategies for expanding Wildland Urban Interface and associated challenges for fire management

Strategy

- Assist fire program with development of a comprehensive fuels management program to treat high risk areas through fire and mechanical fuel treatment, to minimize negative impacts of wildland fire on humans and to increase beneficial aspects for fire, especially to wildlife habitat.

Performance Outcomes

- Number and acres of Forest Stewardship Plans addressing fuels treatment in wildland urban interface.

Programmatic Resources Required

- State Wildfire Program
- Western Fire Managers - Wildland Urban Interface grants
- Forest Stewardship Program
- Natural Resources Conservation Service

National Themes Addressed

- Protect Forests from Threats

Assessment issue 2: Maintaining and Expanding Sustainable Output of Forest Products

Goal - Provide for effective management of second growth forest, including roads

Strategies

- Provide financial and technical assistance to eligible private landowners for forest planning.
- Work the Federal partners for cost-share funding to private landowners.

Performance Outcomes

- Number of forest acres planned and treated and miles of road repaired.

Programmatic Resources Required

- Forest Stewardship Program
- Natural Resources Conservation Service
- Other Federal
- Forest Resources and Practices

National Themes Addressed

- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses

Goal - Support development of biomass energy in rural Alaska

Strategy:

- Provide financial and technical assistance to eligible private landowners for forest planning.

Performance Outcomes

- Forest acres planned and treated.
- Programmatic Resources Required.
- Forest Stewardship Program.
- Natural Resources Conservation Service.
- Forest Resources and Practices.
- Alaska Energy Authority - Alternative Energy Program.

National Themes Addressed

- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses
- Enhance Public Benefits from Trees and Forests

Assessment issue 4: Enhancing community benefits from trees and forests

Goal - Address land transfers, forest conversion and demographic changes in program and plans

Strategy

- Assist the Division of Parks and Outdoor Recreation in developing proposals for the Forest Legacy Program.

Performance Outcomes

- Number of successful Forest Legacy Projects completed.

Programmatic Resources Required

- Alaska Division of Parks and Outdoor Recreation
- Forest Legacy Program
- Forest Stewardship Program

National Themes Addressed

- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses
- Enhance Public Benefits from Trees and Forests

Goal: Meet the increasing demand for fire wood for home heating

Strategy

- Assist private landowners plan for fire wood harvest.

Performance Outcomes

- Number and acres of Forest Stewardship Plans addressing fire wood.

Programmatic Resources Required

- Forest Stewardship Program

National Themes Addresses

- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses
- Enhance Public Benefits from Trees and Forests

Assessment issue 5: Maintaining or improving output of ecosystem services

Goal - Contribute to the Governor's climate change subcabinet recommendations for carbon sequestration

Strategy

- Forest management for carbon sequestration by coastal forest pre-commercial thinning and fertilization and boreal forest reforestation after fire or insect and disease mortality.

Performance Outcomes

- Number and acres of Forest Stewardship Plans addressing thinning and reforestation.

Programmatic Resources Required

- Forest Stewardship Program
- Natural Resources Conservation Service
- Other Federal
- Forest Resources and Practices

National Themes Addressed

- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses
- Enhance Public Benefits from Trees and Forests

Goal - Support cost effective habitat management for commercial, subsistence and sport uses.

Strategy

- Provide financial and technical assistance to eligible private landowners for forest planning.

Performance Outcomes

- Number of forest acres planned and treated and miles of road repaired.

Programmatic Resources Required

- Forest Stewardship Program
- Natural Resources Conservation Service
- Other Federal
- Forest Resources and Practices

National Themes Addresses

- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses
- Enhance Public Benefits from Trees and Forests

Assessment issue 6: Cross Cutting Issues

Goal- Maintain and increase public support for forest management (social license)

Strategy

- Use modern technology to expand outreach, increase information exchange and promote partnerships with rural Alaskan communities.
- Support and work collaboratively with the Division's Conservation Education Program.

Goal- Develop better data and information

Strategies

- Seek cross program funding opportunities for acquisition of high resolution geospatial data for priority landscapes.
- Develop forest regeneration techniques for woody biomass.
- Improve Forestry's GIS capability. Provide training modules in GPS/GIS.

Performance Measures

- Number of new or revised Forest Stewardship Management Plans completed.
- Number of new or revised Forest Stewardship Management Plans completed in important forest resource areas.
- Number of acres covered by current Forest Stewardship Management Plans (cumulative).
- Number of acres in important forest resource areas covered by current Forest Stewardship Management Plans (cumulative).
- Number of landowners receiving Forest Stewardship Program technical assistance.
- Number of landowners participating in Forest Stewardship Program educational programs.
- Total number of acres in important forest resource areas being managed sustainably, as defined by a current Forest Stewardship Management Plan through a monitoring program.

Conclusion

This Statewide Forest Action Plan identifies programmatic resources and strategies to address goals as identified in the Statewide Assessment of Forest Resources. These goals were developed through a collaborative outreach with stakeholders who identified six key issues important to stakeholders. Most of these issues and underlying goals are served by employing multiple programmatic resources available to the State Forester.

Implementation of the Statewide Forest Action Plan requires successful implementation of the Division of Forestry Strategic plan and continued public support and funding at both the state and national level. Continued partnerships with several Federal and State agencies, local governments, and the private sector are also needed. When partners and the public understand the Division of Forestry goals and strategies, programs and outcomes can be improved.