Success Stories from the Western Region

The BLM-Alaska Fire Service:
A Coordinated Approach to Wildland Fire Management

For decades, land managers in Alaska have been grappling with the key issues addressed in the Cohesive Strategy. Alaska's population is small, and much of it is scattered across a vast landscape in small communities, many of them accessible only by air. For those communities, self-sufficiency in meeting day-to-day needs and many types of emergencies has always been a necessity, not an option. In the event of wildland fire, however, even the most well developed local capacity may be insufficient to cope with the magnitude and complexity of the threat, and outside assistance can be required.

BLM-AFS Logo

In the state's more urbanized areas, preparation and mitigation in the wildland-urban interface depends on both individual and community effort. Knowledgeable and readily available information providers, as well as technical and/or financial assistance resources, are needed on a continuing basis to help communities become more fire-adapted. Existing local fire and emergency services also may need to be supported and reinforced in the event of wildfire.

Enabling wildfire to play its natural role on the landscape is essential to ecosystem health and to the overall wellbeing of the State and her people. Natural resources are the basis of Alaska's economy – whether in oil or mining development, timber harvest, fishing, hunting, tourism and recreation, or other activities. Much of the landscape is under federal management, so maintaining landscape health and resilience requires close cooperation among the state and federal agencies, Native corporations, and private landowners.

Fire-adapted communities, resilient landscapes, and necessary wildland fire management and/or suppression – all are understood in Alaska. How the strategy to achieve and maintain them has evolved and been successful on the ground is essentially the story of the Alaska Fire Service.

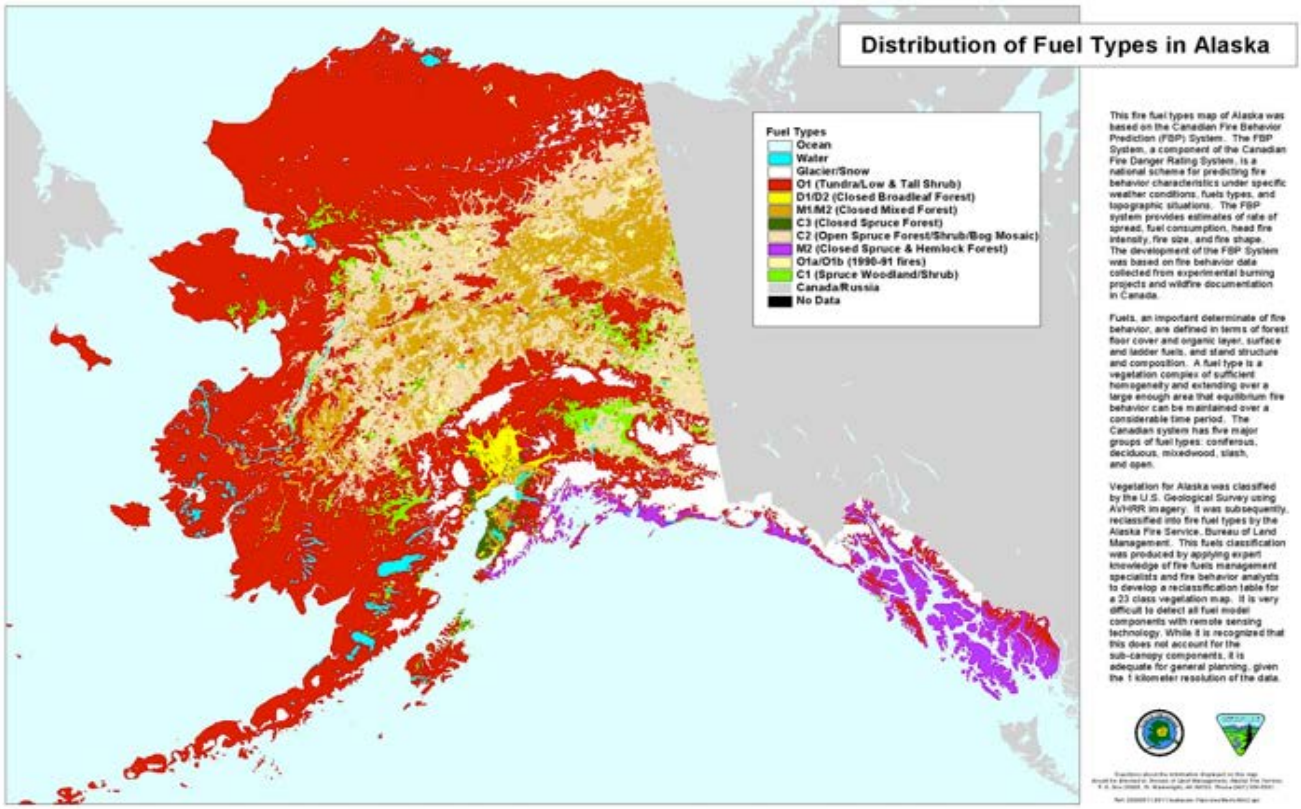
The Land

Alaska is a huge state– 616,240 square miles (394,393,600 acres), or about one-fifth of the total area of all other 49 states combined. Its landscape is shaped by three major ecosystems:

- coastal temperate rainforest − a dense mix of Western hemlock, Sitka spruce, mountain hemlock and Alaska yellow cedar that extends from the Kenai Peninsula east and southward through the 17 million acre Tongass National Forest and into British Columbia. Due to the area's cool, moist climate (averaging 200

inches of precipitation annually), wildfires are infrequent in the rainforest, and are usually human-caused.

- boreal forest (or taiga) − sprawls across the interior of the state, its thick stands of tall, thin black spruce and white spruce interspersed with shrub lands, marshy areas, lakes and rivers, open meadows, and groves of poplar, birch and aspen. Long, cold winters, short summers, and frequent wildfires continually reshape this unique ecological resource.



Distribution of Fuel Types in Alaska
Source: BLM-AFS

- tundra − the defining characteristic of which is the lack of trees. "Tree growth is limited by] a combination of factors: growing seasons that are too short for plants that produce wood, strong persistent winds that desiccate and abrade plant tissues, permafrost that prevents roots from reaching deeply enough into the soil to provide support, and cold soils that slow decomposition and nutrient cycling." [1]

According to the U.S. Geological Survey's National Land Cover Database for Alaska, the landscape is 38.4% shrub/scrub or dwarf scrub, 15.5% evergreen forest, 14.2% open water, 12.13% sedge, moss, and wetlands, 7.7% barren land 4.3% perennial ice and snow − and barely more than a tenth of one percent (.113%) developed or cultivated.

"We've always had large fires in Alaska," says Mary Lynch, Planning and Environmental Coordinator for the BLM-Alaska Fire Service, "and we're at the forefront of climate change and change in vegetation cover. Our black spruce forest may become more of a grass plain because of the effect of fire and recovery. In 2004 we had 6.6 million acres burn, the most [since yearly records have been kept]. Because of our management plan, not all our [fires are] suppressed. Fire is a natural disturbance in black spruce and boreal forest."

On the tundra, change is also being seen. "After a 10,000-year absence, wildfires have returned to the Arctic tundra," reported Science News in 2011, describing the findings of a study of the 2007 Anaktuvuk River fire, which burned more than 400 square miles in the Brooks Range. The research team (on which the Alaska Fire Service participated) studied the amount of carbon released not only from the aboveground burn, but also as a result of the fire's heat melting the underlying permafrost and freeing the carbon stored in the peaty soil. "With better data on the long-term impact of tundra fire on global climate warming [the lead researcher] said, putting out these fires might become more of a priority." [2]

West Fork Chena Fire (2002) 50 miles E of Fairbanks, AK
Photo Credit: BLM-AFS

The People and Places

The United States purchased the land that is now Alaska from Russia in 1867. The first official census of the Alaskan population wasn't taken until 1880, at which time there were 33,426 residents, 94% of whom were Alaska Natives. Most lived in small communities near the coast or along one of the region's major river systems, which served as natural travel corridors.

By 2010 the population had grown to 710,231, with 468,893 (66%) classified by the Census Bureau as urban residents. Of those, 251,243 (35.4%) were in the Anchorage "urbanized area" (UA) and 64,513 (9.1%) in the Fairbanks UA. Another 153,137 (21.6%) lived in 13 "urban cluster" areas ranging in size from 2,944 residents (Eielson Air Force Base) to 44,236 residents (Lakes−Knik-Fairview−Wasilla). In terms of land area, only 260 square miles of the state were considered to be urban, while 570,381square miles were categorized as rural. There are 355 "places" in Alaska (incorporated communities and Census Designated Places). Of those, 312 (88%) reported populations of less than 500. According to the state Department of Transportation, roughly 82% of Alaskan communities are not served by roads, but there are 252 state-managed rural airports.

Land Ownership and Management Authorities

After the 1867 purchase of Alaska, the U.S. Army was the first federal agency to exercise authority over the area. Then the Treasury Department sent agents to collect taxes and enforce anti-smuggling laws, and the U.S. Navy came to support the Army. In the interior region of Alaska, however, there was no American presence for many years. Alaska Natives governed themselves through customs and traditions developed over generations. [3]

In the Organic Act of 1884, Congress decreed that the "district" of Alaska would have an appointed governor, a temporary capital, a district court, and a land office to deal with mining claims. Congress also pledged that "the Indians or other persons in said district shall not be disturbed in the possession of any lands actually in their use or occupation or now claimed by them," and then added a qualifier – "but the terms under which such persons may acquire title to such lands is reserved for future legislation by Congress…." In 1912, after the Gold

Rush and the growing recognition of Alaska's valuable natural resources, it was Congressionally upgraded to "territory" status, but Congress still retained for itself the right to deal with natural resource management and land transfer matters.

> The real governing power in Alaska was not the weak territorial government, but was really the unelect ed officials from the nine federal agencies that had a hand in Alaska affairs. These various departments had as many as 38 bureaus operating in Alaska…. Until statehood, 99% of the land was under federal control. [4]

Statehood finally was achieved in 1959. The enabling legislation provided that 225 million acres in the state would remain federal land, although 90% of the profits from mineral lease sales on that land would go to the State. Then, within the next 25 years, the State could also select up to 104 million acres of "vacant, unappropriated, and unreserved" land for its own. The Department of the Interior (DOI) Bureau of Land Management (BLM) already was in charge of the vast majority of Alaska's land resources, and it became responsible for implementing the land transfer process outlined in the statehood legislation.

Wildland Fire Control and Management in Alaska, 1939-1959

The history of fire control and management in Interior Alaska dates back to 1939 when the Alaskan Fire Control Service was established. Headquartered in Anchorage, it was given responsibility for fire suppression on an estimated 225 million fire-prone acres of public domain lands in Alaska. When BLM was formed in 1946, it received the management authority for most of Alaska's federal lands and also absorbed the Alaska Fire Control Service. It thereby assumed a unique fire suppression role compared to what it had in other states. In the rest of the country, other federal agencies and the BLM had mutual aid agreements with other land managers, but in Alaska the BLM was the sole wildfire suppression agency for the entire state except for U.S. Forest Service lands.

In 1959, the first of three large divestures of land managed by BLM-Alaska began. In addition to the 104 million acres covered by the Alaska Statehood Act, BLM was later charged with transferring 44 million acres to the Native corporations established under the Alaska Native Claims Settlement Act of 1971 (ANCSA), and then approximately 100 million acres from under its own administration to the National Park Service, U.S. Fish and Wildlife Service, and U.S. Forest Service under the terms of the Alaska National Interest Lands Conservation Act of 1980, (ANILCA).

Now, after necessary extensions of the original 25-year deadline for resolving competing or inappropriate claims, the majority of the conveyances to the State and Native corporations have been accomplished. Once conveyances are completed, BLM will manage approximately 65 million acres of public lands in Alaska. The changes in land management authority, however, did require rethinking and restructuring BLM's wildland fire suppression responsibilities.

Wildland Fire Management in Alaska – 1959 to date

Under ANCSA, the federal government was directed to continue to provide wildland fire suppression on lands conveyed to Native regional and village corporations. In response to ANILCA, the BLM-Alaska Fire Service (AFS) was formed and assigned the fire suppression responsibility for all DOI-administered lands in Alaska as well as all Native Corporation lands conveyed under ANCSA. DOI-administered lands include land managed

by the BLM, the National Park Service, Fish and Wildlife Service, and Bureau of Indian Affairs. Each agency remains accountable for following its own mandates and policies for resource and wildland fire management. The role of AFS is to implement each agency's direction.

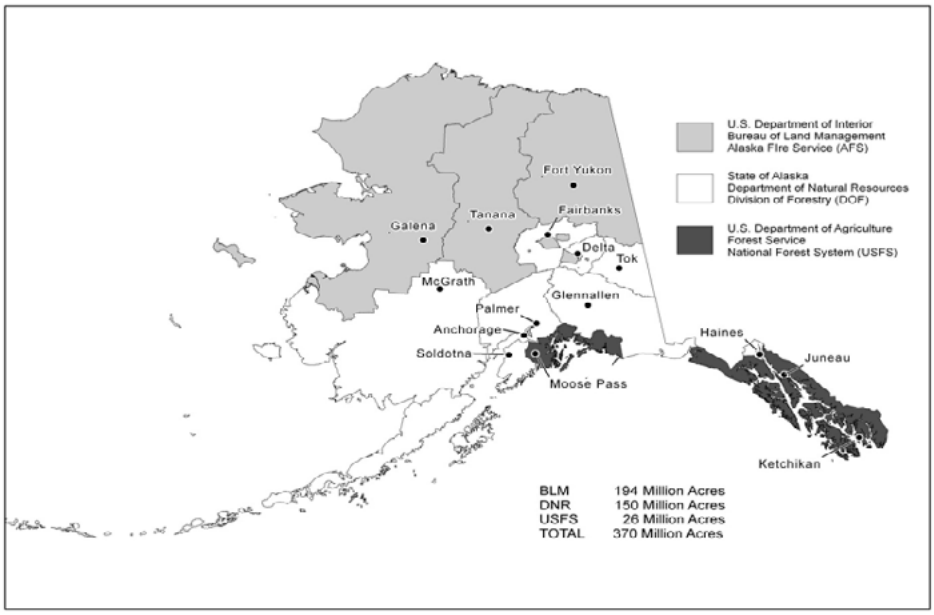
BLM's own fire suppression authority was delegated to AFS, and the Division of Fire Management in the BLM State Office was phased out. Today, as part of his interagency role, the AFS Manager works directly for the BLM State Director and serves as the BLM State Fire Management Officer. The BLM Field Offices[5] retain the fire management responsibilities; AFS implements the fire direction given by the Field Offices and provides technical fire management expertise.

The State of Alaska, meanwhile, had established a wildland fire suppression organization in the Department of Natural Resources (DNR), Division of Forestry, and, in the mid-1970s, gradually began to assume suppression responsibilities in the Anchorage area and on the Kenai Peninsula. A reciprocal fire protection agreement was signed by the BLM, AFS and the State to cooperatively provide fire suppression operations in fire-prone areas. (AFS also has an agreement with the U.S. Army-Alaska for wildland fire suppression on BLM-managed lands withdrawn for military use.)

North Star Fireline
Photo Credit: BLM-AFS

Under the State agreement, AFS has the suppression responsibility for wildland fires in the northern half of the Alaska, regardless of ownership. The State has the suppression responsibility for wildland fires in southcentral Alaska, most of southwestern Alaska and portions of the central interior. Since 1985, when the State took over protection responsibilities for 66 million acres in southwest Alaska, the State and AFS each protect roughly half of the fire-prone lands in Alaska. The Forest Service protects State, federal, and Native lands within the boundaries of the Chugach and Tongass National Forests.

Wildland Fire Protection Areas
Map courtesy of BLM-AFS.



Title XII of ANILCA also created the Alaska Land Use Council, co-chaired by the Governor of Alaska and a Presidential appointee. Other members designated were:

1. the head of the Alaska offices of each of the following Federal agencies: National Park Service, United States Fish and Wildlife Service, United States Forest Service, Bureau of Land Management, Heritage Conservation and Recreation Service. National Oceanic and Atmospheric Administration, and Department of Transportation;
2. the Commissioners of the Alaska Departments of Natural Resources, Fish and Game, Environmental Conservation, and Transportation; and
3. two representatives selected by the Alaska Native Regional Corporations (in consultation with their respective Village Corporations)

This Council was to study and advise federal and state governments and Native Corporations with respect to "ongoing, planned, and proposed land and resources uses in Alaska" and recommend ways "to improve coordination and consultation between said governments…." Further, it was to "recommend cooperative planning zones consisting of areas of the State in which the management of lands or resources by one member materially affects the management of lands or resources of another member or members… Federal members of the Council are authorized and encouraged to enter into cooperative agreements with Federal agencies, with State and local agencies and with Native Corporations providing for mutual consultation, review, and coordination of resource management plans and programs within such zones." Finally, the Council was to establish a broadly representative "public participation program" to assist the Council in its work.

Early on in its work the Council advocated multi-jurisdictional planning efforts and created the Fire Control Project Group to establish definitions and criteria for categories of fire protection and response as well as a schedule, organization, and process for completing interagency fire management plans (IFMPs). The basis for today's interagency wildland fire management in Alaska is found in the IFMPs which were completed for 13 geographic areas of the state between 1982 and 1988.

Alaska Interagency Fire Management Plan 2010

The wildland fire management program in Alaska is a joint effort among federal, state, and Native organizations, in which each entity is still able to adhere to its own mandated policies, regulations, laws and mission. The guiding document for the interagency mission is the Alaska Interagency Wildland Fire Management Plan (AIWFMP). Its purpose "is to promote a cooperative, consistent, cost-effective, interagency approach to wildland fire management, and it is the interagency reference for wildland fire operational information."

> *Jurisdictional agencies have worked cooperatively to assign fire management options throughout Alaska on a landscape scale across agency boundaries… The response to a wildland fire is determined by the management option designation and the likely consequences of the fire on firefighter and public safety. The options offer a choice of responses from aggressive suppression to surveillance, and that range of responses provides an opportunity for agencies to achieve both protection and natural resource management goals and objectives. The response listed under each option addresses normal fire conditions and a high percentage of wildland fire situations that occur in Alaska. Situations arise where non-standard responses are prudent and justifiable. Procedures for those situations and for revising option designations are also included.* [6]

The descriptions of the four wildland fire management options (**Critical, Full, Modified, Limited**) were established in interagency planning efforts during the 1980s. Values-at-risk, ecological considerations and suppression costs were factors used to develop the management option criteria. The standard response associated with a management option designation is described, and the AIWFMP allows for non-standard responses with decision support.

Fire Crew from Chevak
Photo Credit: Mary Lynch

Following are excerpts from the management option descriptions:

Critical: *These are the highest priority areas/sites for suppression actions and assignment of available firefighting resources. Lands in wildland urban interface and other populated areas where there is an immediate threat to human life, primary residences, inhabited property, community-dependent infrastructure, and structural resources designated as National Historic Landmarks qualify to be considered for this designation. This classification is applicable an entire village or town as well as a single inhabited\ structure…*

Full: *This option provides for protection of cultural and paleontological sites, developed recreational facilities, physical developments, administrative sites and cabins, uninhabited structures, high-value natural resources, and other high-value areas that do not involve the protection of human life and inhabited property… Either broad areas or specific sites qualify to be designated as Full…*

Limited: *Limited is designed for broad, landscape-scale areas where the low density and wide distribution of values to be protected best allows for fire to function in its ecological role. Sites that warrant higher levels of protection may occur within the boundaries of Limited areas and actions to protect these sites will be taken when warranted without compromising the intent of this management option.*

Wildland fire is used as a management tool to maintain, enhance and improve ecological conditions. In these areas, fire is routinely able to function in its natural roles as an essential ecological process. Limited is also assigned to areas where the cost of suppression may exceed the value of the resources to be protected or the environmental impacts of fire suppression activities may have more negative impacts on the resources than the effects of the fire.

Modified: *Modified is the most adaptable option available to jurisdictional agencies since the response to wildland fire is based upon fire and environmental conditions. …The Modified option provides a management level between Full and Limited. Unlike Full management areas, the intent is not to minimize burned acres, but to balance acres burned with suppression costs and, similar to Limited, to accomplish land and resource management objectives when conditions are favorable.*

The response to a wildland fire is determined by the management option designation and the likely consequences of the fire on firefighter and public safety. The options offer a choice of responses from suppression actions that restrict size and extent of fire to monitoring and continuing the natural fire regime. That range of responses provides an opportunity for agencies to achieve both protection and natural resource management goals and objectives. Options are assigned on a landscape scale across agency boundaries. Jurisdictional agencies have selected management options based upon an evaluation of their legal mandates, policies, regulations, resource management objectives, and local conditions… Ideally, option boundaries are readily identifiable from both the air and on the ground, are based on fuel types, access, topographic features, natural barriers and fire regimes, and reflect operational feasibility.

The careful, collaborative planning and forethought that went into negotiating and implementing the current Alaskan approach to wildland fire management has indeed resulted in a "cooperative, consistent, cost-effective, interagency approach" that has also proven durable and flexible. It has enabled large-scale landscape management across ownership and jurisdictional boundaries, and has complemented the efforts of communities to become and remain fire-adapted. It is unlikely that the Alaskan system could be replicated elsewhere − given the uniqueness of the State's size, landscape, and land ownership and management patterns – but there are many valuable lessons to be learned from its approach. It may well be that others can usefully look (as Alaska's motto says) "North to the Future."

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[1] "What Causes Tundra?, Alaska Department of Fish and Game, last accessed 8/23/12 at http://www.adfg.alaska.gov/index.cfm?adfg=tundra.main

[2] Science Daily, Retrieved August 23, 2012, from http://www.sciencedaily.com/releases/2011/07/110727131415.htm

[3] Alaska History and Cultural Studies, "Governing Alaska," last accessed 8/22/12 at http://www.akhistorycourse.org/articles/article.php?artID=317

[4] http://www.akhistorycourse.org/articles/article.php?artID=137

[5] BLM Districts are now called Field Offices.

[6] Alaska Interagency Fire Management Plan 2010, p.1, last accessed 8/26/12 at http://fire.ak.blm.gov/content/admin/awfcg/C.%20Documents/Alaska%20Interagency%20Wildland%20Fire%20Management%20Plan/Alaska%20Interagency%20Wildland%20Fire%20Managment%20Plan%202010.pdf