

THE LEARNING CURVE

FIVE LESSONS LEARNED AND EFFECTIVE PRACTICES WESTERN STATE FIRE MANAGERS SEPTEMBER 2006 – 10TH EDITION

SAFETY

Decreasing Nebraska Human-Caused Wildfires

Railroad operations represent a major cause of wildfires in Nebraska, with six major railroad companies having operated in the state for thirty years.

The Nebraska Forest Service (NFS) began working cooperatively with the state Public Service Commission (PSC), who maintains responsibility for inspecting railroad operations, including locomotives. The NFS began their effort by providing the PSC with fire reports and statistics demonstrating the railroad fire problem. They then accompanied PSC members on visits to railroad facilities to assure that PSC personnel were completely prepared to conduct their locomotive inspections. In addition, PSC members spent time along Nebraska's railroad lines during nighttime hours, looking for the telltale glowing particles in the exhaust of the offending locomotives.



*Photo Courtesy of John Sly, Fire Chief,
Westwood Fire Company*

NFS began sending reports of railroad caused fires to the six railroad companies, so that they could see the role trains played in Nebraska's fire problems. The two railroads, who were the leading offenders, could then recognize how they measured up against their competitor. Ultimately, peer pressure began to mount, and railroads began competing to see who would reduce number of incidents caused by their operations, and who could better improve their safety programs.

Since the NFS began their efforts to combat railroad fires approximately 15 years ago, the railroads have significantly reduced the number of fires caused by their operations. In 1980, railroad operations caused 581 wildfires in Nebraska. In 2004, railroad operations caused only 41 fires.

PLANNING

Mutual Aid Agreements are the Cornerstone

The mission of the Hawaii Division of Forestry and Wildlife (DOFAW) Fire Management Program is to provide protection to forest reserves, natural area reserves, wildlife and plant sanctuaries, and public hunting areas. By virtue of its core mission, DOFAW plays a pivotal role in protecting the state's watersheds, unique forest resources that include forest products as well as threatened and endangered species. Because wildfire is a threat to Hawaii's economy, society, and natural resources, all levels of government have established fire services to guard against the impact of uncontrolled conflagration.

However, DOFAW functions primarily as a natural resource agency. The Division personnel are primarily natural resource managers, not full-time wildland firefighters. Firefighting is just one of the many aspects that make up the Division's responsibilities. It is for this reason that DOFAW carries out its fire mission through close cooperation with other established fire control agencies.

DOFAW cooperates closely with fire departments in each of the state's four counties. These local fire departments perform the majority of statewide initial attack.

With its county cooperators, DOFAW is involved in the protection of 3,360,000 acres statewide, approximately 81% of the state's land area. Various military fire departments, the US Department of Interior (National Park Service and U.S. Fish & Wildlife Service), and The Nature Conservancy of Hawaii manage the remainder of the lands.



Historically, the Division relied on a system of district fire wardens to help suppress fires in rural settings. Because they were distributed throughout the rural areas of the islands, many plantation owners and ranchers served as an effective network of partners who could quickly respond to wildland fires with manpower and equipment. However, in the last decade, this system ended with the decline of the agricultural industries that supported it. In place of the declining agricultural industries, local fire departments improved their capabilities in response to the growth of the islands' population and the resulting urban sprawl.

County fire departments have increased both their number of fire stations and firefighters. This increase in fire protection has served to provide extended coverage to rural and wildland areas as well, providing both a need and an opportunity to clarify relationships between DOFAW and the fire departments. Fire departments often requested DOFAW to respond to fires outside the Division's legal jurisdiction. Consequently, DOFAW rapidly depleted its fire suppression funding and was subsequently unable to address fire threats on land under its Division jurisdiction.

To meet its legal fire protection mandate for state-owned lands while honoring its partnerships with other fire services, DOFAW negotiated with its local fire departments and established a cooperative mechanism for fire prevention, pre-suppression and suppression. These cooperative mechanisms are documented in a Mutual Aid Agreement.

Lesson Learned:

Mutual Aid Agreements are the cornerstones by which DOFAW's Fire Management Program is based. These Mutual Aid Agreements identify the responsibilities of each party as well as other fire management activities such as joint participation in prevention, training, and equipment acquisition. DOFAW has existing mutual aid agreements with the following agencies:

- County of Kauai Fire Department
- City and County of Honolulu - Honolulu Fire Department
- Maui Department of Fire Control
- Hawaii County Fire Department
- U.S. Army - Support Command Hawaii
- National Park Service
- Pacific Missile Range Facility, Barking Sands, Kauai



DOFAW and its cooperators have delineated a color-coded map of each county. This map depicts areas where DOFAW has primary fire responsibility, areas where the Division could respond mutually with other firefighting agencies, and areas outside DOFAW jurisdiction. DOFAW responds automatically to fires in its areas of primary jurisdiction. Areas of mutual aid are generally adjacent to the

division primary response areas and DOFAW responds on mutual aid when requested by the county fire department. DOFAW responds to fires in the white areas only under specific conditions, such as when there exist extreme threats to public safety, local resources are fully committed, there is extreme fire behavior, etc. DOFAW responds only when requested through approved channels, and only if Division resources are available.

To view the maps and diagrams go to <http://www.state.hi.us/dlnr/dofaw/fmp/firemaps.htm>

Rural Firefighters Association is Instrumental

In 2005, for the first time ever, the Wyoming Legislature funded the Wyoming State Forestry Division (WSFD) to contract for a Type 3 exclusive use helicopter with crew, during its 120-day season. Most notable, is how the Division's helicopter operation came into existence. Like other western states, WSFD relies on a partnership with rural, volunteer firefighters to carry out its responsibilities. The Division first provided exclusive use helicopter support to its rural fire department partners in 2004, when the Governor released surplus funds to the WSFD. However, the Governor's budget guidance for 2005 did not permit the Division to include continued funding of this resource.

Lesson Learned:

The Governor's budget guidance for 2005 caused the Wyoming Rural Firefighter's Association (WRFA) to step in. Having experienced the value of the helicopter the year before, the WRFA worked with a state legislator who was also a volunteer firefighter, to prepare and sponsor a bill to fund a WSFD exclusive use, fire control helicopter. Then, the Wyoming State Fire Chief's Association, a registered lobbying organization representing all firefighters in Wyoming, lobbied for the legislation and authorization funding was passed.



*Photo Courtesy of Perry Walker,
The Sublette Examiner*

The WSFD now provides helicopter support to Wyoming firefighters, at a cost of \$375,000 per year, and the helicopter has already proven its value. In 2005, the helicopter made initial attacks on 35 fires, was called for two search and rescue missions and provided mapping and reconnaissance support for the tornado in Wright, WY.

OPERATIONS

Aerial Fire Suppression Program

Nebraska is primarily an agricultural state, and pilots who fly crop dusters are plentiful. The Nebraska Forest Service utilizes this aviation resource to support their aerial fire suppression program.

Lesson Learned:

Thirty-nine aerial applicators (agricultural spray pilots) agreed to cooperate with the agency in the Aerial Fire Suppression Program coordinated by the Nebraska Forest Service. Additionally, 29 locations exist around the state, where foam retardant concentrate is stored specifically for use in the aerial suppression of wildfires. The Nebraska Fire Marshal's Training Division offers training for the agricultural spray pilots and local fire chiefs. The aircraft used must pass an annual inspection and pilots must be certified. When fighting wildfires, payment to the pilots comes from the state emergency fire fund. Payment to applicators covers actual flight time only – there is no payment for standby. There is excellent interagency cooperation in this program from agencies such as Local Fire Departments, Nebraska Department of Aeronautics, County Sheriffs, Nebraska State Patrol, and the Nebraska Emergency Management Agency.



Photo Courtesy of Nebraska Forest Service

Dramatic successes are evident based on reports from local fire chiefs who have utilized these aircraft. Several reports have credited the aircraft with helping the ground forces suppress wildfires with structures in their path. Keeping wildfires small is the key. When they get to be thousands of acres in size, they can threaten a multitude of structures. There might not be enough ground forces available to reach these structures before the fire does. The year 2000 was the busiest year in recent history, with 66 planes making 196 drops on 40 wildfires.

Complete details and specifics of this program are included in the publication [Emergency Assistance for Wildfire Control](#). This publication can be downloaded from the Nebraska Forest Service website at <http://www.nfs.unl.edu/FIRE/AerialFireSuppression.htm>.

COMMUNICATION

Public Education and Prevention Efforts

In Washington, combined public education and prevention efforts are effective in reducing the number of human-caused fire starts, reducing risk to life and developed property when fires do start.

Lesson Learned:

A few years ago, the Washington Department of Natural Resources (WDNR) began to concentrate on helping individuals understand their personal responsibility to prevent wildfires by adopting the Firewise approach. Firewise evolves continually and WDNR targets both individuals and communities, educating them about living with fire.



The WDNR uses state-level fire prevention teams. Currently, the agency employs up to five pre-formed teams, who deploy during major incidents and/or during peak potential fire ignition periods, such as holiday weekends. The fire prevention teams set-up at highway rest areas, on major mountain passes, as a central point of contact with recreationists.

Like all wildland fire agencies, the WDNR struggles to quantify its fire prevention successes. However, anecdotal evidence suggests that their fire prevention efforts work, in spite of increased public use of recreational lands. For several years, human-caused fire occurrence has held at, or just under, the agency's 10-year average, in spite of increased public use of recreational lands. The WDNR's philosophy is that it is better to spend a dollar of taxpayer's money on fire prevention to save tens, hundreds, or even thousands of dollars in fire suppression costs.