

Incident Summary Page for the 100 Fires Project

<b>Incident Name:</b> Ransom Road Fire	<b>Incident Date &amp; Time:</b> 06/08/1981 @ 15:30 hours
<b>Incident Location:</b> Merritt Island National Wildlife Refuge, Titusville, Florida	<b>Incident Size:</b> Unknown
<b>Type of resource involved:</b> US Fish & Wildlife Service tractor plow operator and swamper	<b># of Fatalities/injuries:</b> 2 fatalities
<b>Reason this fire was selected for the 100 Fires list:</b> ➤ Fire made a notable impact within the wildland fire service	
<b>Conditions leading up to the event:</b>	
<p>The Merritt Island area entered the 1981 fire season with a spring drought on the heels of several years of below normal rainfall. Ponds and ditches that would normally be full of water were dry. Fuel conditions in the area were very hazardous with thick stands of palmetto approaching heights of 8 feet. Wax myrtle, gallberry, and tall grass was mixed abundantly with the palmetto. The fuels were modeled as a high pocosin, which is similar to chaparral in terms of fire behavior. Lightning is a common occurrence in the area and the number of lightning strikes is among the highest in the nation. Associated rain showers are very local in nature, sometimes delivering over two inches of rain in one spot and nothing just a short distance away. Holdover fires are common.</p> <p>The US Fish &amp; Wildlife Service didn't have an organized wildland fire program in the late 1970s and early 1980s. Most fire management activities were carried out by collateral duty employees. This included the Merritt Island National Wildlife Refuge where there was a limited supply of substandard tools and personal protective equipment. Training was limited as well and there was no devoted budget for fire management activities.</p> <p>A similar incident occurred on the Okefenokee National Wildlife Refuge in February 1979. In that instance a tractor plow operator was plowing fireline approximately 150 yards away from a slow moving fire in palmetto and gallberry fuels when a change in wind direction and speed caused the fire to rapidly overtake the operator. The operator was caught on his tractor, with only time to seek shelter underneath it with no fire shelter and perished.</p>	
<b>Brief description of the event:</b>	
<p>Early in the afternoon of Monday, June 8 four fires were reported on Merritt Island National Wildlife Refuge. These were apparently holdovers from lightning strikes on June 7. One of the fires was deemed to be no threat and no suppression action was taken on it. The other three fires were in the same general area, where Ransom Road and Jerome Road met. Fire # 3 was suppressed by US Fish &amp; Wildlife Service and NASA employees with significant assistance from rain and hail out of a passing thunderstorm. Fire # 1 also received initial attack by US Fish &amp; Wildlife Service employees shortly before 14:30. While suppression action was underway on this fire, a crewmember was sent to check Fire # 2, ultimately known as the Ransom Road Fire. A pumper truck also arrived on scene as the initial crewmember was conducting a backfiring operation on Fire # 2. The main fire reached Ransom Road and caused a spot fire, which was put out by the pumper truck crew.</p> <p>Meanwhile, at approximately 15:30, two US Fish &amp; Wildlife Service employees, Beau Sauselein and Scott Maness, arrived on scene at Fire # 2 with a tractor plow unit after the successful initial attack on Fire # 1. The tractor plow was unloaded and proceeded east along Ransom Road before beginning to plow a line south, into the wind. Sauselein was considered an experienced tractor operator with "...rather extensive training and experience on many fires." Maness was acting as a swamper and observer under the Sauselein's supervision and was assigned to watch the fireline for roots and trash that needed to be cleared out and to observe weather and smoke for Sauselein. Maness was relatively inexperienced.</p> <p>Shortly after he began plowing fireline, Sauselein called the Fire Boss notifying him of a second head of fire paralleling the first and moving toward Ransom Road. Both warned the other to be aware of this second headfire. Shortly after this radio traffic the wind shifted 90 degrees from the south to the west. Gusts were recorded up to 39 mph behind the wind shift. This shift turned the flanking fire into a head fire. The accident scene indicated Sauselein saw the wind shift, raised the plow, and changed direction to the east then southeast in an attempt to outrun the fire. After about 110 yards the tractor plow became stuck on a stump and the Sauselein couldn't get unstuck. The two men abandoned the tractor plow and began running to the east-southeast. After 43 yards they became trapped by an extremely heavy strip of palmetto. Sauselein wasn't able to wear his fire shelter while on the tractor plow and he had forgotten to grab it when he jumped off. The two attempted to deploy a single shelter in a tall patch of grass, which was the clearest spot available.</p> <p>Both men received third degree burns over most of their bodies as the fire passed. After attempts to contact them via radio failed one of the crewmembers on Ransom Road was sent to look for them. He was able to follow the plow line and found where the plow had been lifted. He found the abandoned tractor plow and after a few moments he heard one of the two men cry out. He went to them and called for help, providing sips of water and care as he could until help arrived. Ambulances arrived on scene at 16:30. Both men arrived at the hospital by 17:40. Maness died in the emergency room shortly after his arrival. Sauselein was transferred to a burn center where he died at 09:35 the next morning.</p>	

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It should be noted that rain stopped the fire just after it burned through the strip of palmetto that trapped the two men. Both men would have survived if they had been able to go another 20 yards in the direction they were heading.

**Fire behavior factors that were present during the event:**

High pocosin fuel models burn similarly to chaparral. They burn with a very high intensity and have a high rate of spread, producing very dense smoke. Fire suppression and control is very difficult because of the thick vegetation and direct attack at the head of the fire would be impossible.

Initial attack occurred during the peak of the burning period when temperatures were high and the relative humidity was at its lowest. This is also the time of day when thunderstorms build and sweep across the area bringing wind, localized rain, and additional lightning. The wind shifted 90 degrees and increased speed just before the burnover occurred, causing fire spread to also turn 90 degrees and rate of spread increased significantly.

**Operational lessons available for learning from this incident:**

The plow line was indirect, approximately 150 yards away from the fire's flank, and into the wind. Keeping one foot in the black or firing as line was constructed would have reduced the amount of available fuel between tractor plow team and the fire, as well as providing a safety zone behind them in the black.

Tractor plows should be used in tandem whenever possible so a backfire or burnout can be conducted after one pass.

At the time of this incident there wasn't a viable method of wearing a fire shelter while operating heavy equipment. Ensure equipment operators can carry their fire shelters using a chest harness or other similar method while operating equipment.

Use an aerial platform to observe fire behavior and provide tactical guidance, especially in flat terrain.

**Notable impact or historical significance for the wildland fire service from this incident:**

The two deaths on the Ransom Road Fire had a huge impact on the wildland fire community, particularly the US Fish & Wildlife Service. There was a Congressional review of the US Fish & Wildlife Service program as well as other federal and state fire programs. Funding was allocated to the US Fish & Wildlife Service to develop a professional fire program since, up to that time, fire management activities were done completely by non-fire employees. Not only was the US Fish & Wildlife Service fire program professionalized, it made the agency get into fire management planning and solidified a prescribed fire program. In short, this event was the main impetus to bring professional fire management to the US Fish & Wildlife Service refuge system. Additionally, the incident and outcome led to more cohesive coordination between federal and state land management agencies in the southeast and across the country.

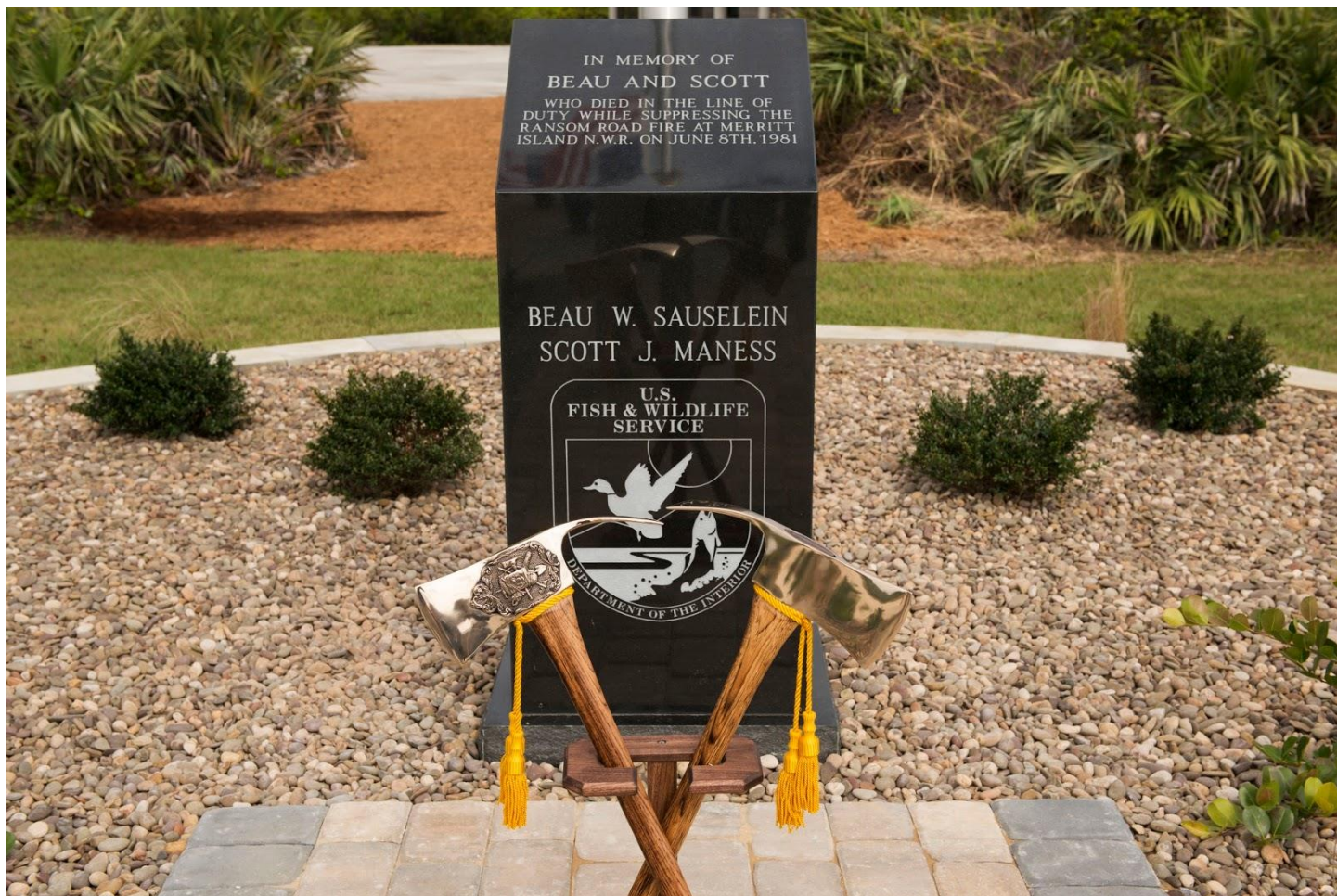
**Links to more information on this incident:**

<https://lessons.fs2c.usda.gov/incident/ransom-road-fire-fatalities-1981>  
<http://wildlandfireleadership.blogspot.com/2017/11/merritt-island-memorial-dedication-and.html?m=1>  
<https://wlfalwaysremember.net/1981/06/08/scott-maness-beau-sauselein/>

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**Memorial at Merritt Island Wildlife Refuge in Florida**